This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

BOSTON
MEDICAL LIBRARY
8 THE FENWAY.

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

THE SCOTTISH
MEDICAL AND SURGICAL JOURNAL

Digitized by Google

EDINBURGH
Printed by
WM. GREEN & SONS

Digitized by Google

THE SCOTTISH MEDICAL & SURGICAL JOURNAL

Under the Editorial Direction of

Professor Simpson, Edinburgh.
Professor Wyllie, Edinburgh.
Professor M'Kendrick, Glasgow.
Professor Stephenson, Aberdeen.
Professor Hamilton, Aberdeen.
Dr. Joseph Bell, Edinburgh.
Dr. Clouston, Edinburgh.
Dr. Sinclair, Dundee.

EDITED BY

NORMAN WALKER, M.D., F.R.C.P.

AND

HAROLD J. STILES, M.B., F.R.C.S.

VOLUME XXII.

(JANUARY TO JUNE)

WITH 14 *PLATES*

EDINBURGH:
WILLIAM GREEN & SONS
1908

Digitized by Google

BOSTON MEDICAL
MAR 12 1910
LIBRARY.

CATALOGUED
MAR 1910
J. F. B.

Digitized by Google

BOSTON MEDICAL
MAR 12 1910
LIBRARY.

11496

THE SCOTTISH MEDICAL AND SURGICAL JOURNAL.

Editorial Notes and News.

Two Great Surgeons.

ALTHOUGH fuller obituary notices appear further on in the Journal, we cannot omit here a reference to the great loss that Edinburgh has sustained in the death of two of its most distinguished surgeons. To the present generation of students Sir Patrick Heron Watson was little more than a tradition, but twenty or thirty years ago he was the first surgeon in Scotland, and he held every post of honour which was in the power of the profession to confer upon him. He had been in failing health for some time, and his death was not unlooked for.

In Mr. Annandale's case the appalling suddenness of the end was tragic. He seemed as vigorous as ever. He operated at 5 o'clock in the afternoon of Thursday, and it seemed hardly possible to believe on Friday that one whom one had seen walking briskly along the corridor the day before, was no more.

We must not trespass on the province of others, but it is only our duty to refer to Mr. Annandale's unfailing interest in the Journal. He was one of its active promoters, he was always interested in its welfare, and he repeatedly contributed to its columns. The statutory business meetings of the Journal were held every year in his hospitable house.

The General Medical Council.

A LARGE part of the tim of the Council during its recent session was occupied with the consideration of penal cases. Two sets of cases come before the Council: those of registered practitioners who have been convicted of certain offences in the Law Courts, and those in which professional misconduct is concerned. In the former class the Council exercises its discretion as to whether or not the offences for which the convictions were registered are sufficiently grave to require

Digitized by Google

erasure from the register, and wherever possible the Council leans to the side of mercy.

The cases of professional misconduct, though often painful, are the more important of the two, for by the means of the decisions recorded the Council is doing its work in gradually raising the standard of professional conduct. At one time the keeping of unqualified assistants was common. But the Council has done much to terminate it, and the consideration of occasional cases must do much to deter any who are tempted in this direction. Only one case of this nature came before the Council, and since the practitioner accused was shown to have been dangerously ill during the employment of the unqualified person, the Council found the charge not proven.

Once upon a time, not very long ago, canvassing for patients was not regarded as bringing the person responsible under the jurisdiction of the General Medical Council, and even yet we fear that a good deal of covert canvassing and advertising escapes judgment. But some two or three years ago the Council dealt with a rather notorious case, and thereafter issued a notice to the effect that "Whereas it has from time to time been made to appear to the General Medical Council that some registered medical practitioners have, with a view to their own gain and to the detriment of other practitioners, been in the habit of issuing or sanctioning the issue of advertisements of an objectionable character, or of employing or sanctioning the employment of agents or canvassers, for the purpose of procuring persons to become their patients: and whereas in the opinion of the Council such practices are contrary to the public interest and discreditable to the profession of medicine: the Council hereby give notice that any registered medical practitioner resorting to such practices thereby renders himself liable to be charged under the 29th section of the Medical Act, 1858, with 'infamous conduct in a professional respect,' and if after due inquiry he is judged by the Council to have been guilty of such conduct the Council may, if they see fit, direct his name to be erased from the Medical Register."

The case before the Council at its recent sitting was one where an old-established practitioner had taken a younger man into partnership, and a card bearing their joint names and addresses was prepared. The charge was that this had been distributed indiscriminately, and in the case of the senior the Council found this proved, while they exonerated the junior from responsibility in the matter. There was nothing objectionable in the card itself, but the case will serve as a warning to others to be very careful in the distribution of any kind of professional announcement.

Perhaps the most important matter in connection with the Register was the decision of the House of Lords in the famous Clifford case.

Digitized by Google

The General Medical Council had erased certain names from the Dental Register. The partner of one of these gentlemen desired, very naturally, to terminate his partnership, but the Judge (Mr. Justice Warrington) held that the decision of the General Medical Council was not to be regarded as final, and held that there was not sufficient evidence of professional misconduct to annul the partnership. A registered dental surgeon was therefore bound in partnership to one whose name had been erased from the Register, and was therefore in the eyes of the law an unqualified practitioner. The Lord Chancellor in delivering a judgment brushed aside all the legal technicalities, and confirmed in a most satisfactory way the decision of the General Medical Council, and thus terminated an absurd situation.

On the motion of Dr. Langley Browne, the Council appointed a committee to procure evidence as to the laws regulating the practice of medicine in the colonies and foreign countries. All the colonial ordinances which have recently been submitted to the General Medical Council have contained clauses prohibiting the practice of medicine by unqualified persons: it is well known that in most foreign countries similar prohibitions exist, and it is hoped that the collection and suitable presentment of these facts will strengthen the case for introduction of some such legislation in this country. Some of the members desired to go further, but it was thought wise in the first instance to seek merely for information not only as to the law but as to the practice, or the carrying out of the law in these countries.

The New Curriculum.

THE entries for the December examinations have shown that the students at anyrate appreciate the change. Nearly 130 final men and women entered for Midwifery and Medical Jurisprudence under the new regulations, and we learn that the appearance of the majority of them has been such as to encourage those who fought so long for the change. A distinctly higher standard has been set and reached. For the week or two preceding the examination there was, we understand, some slackening in the attendance in the medical wards. But this, we have no doubt, will be more than made up after the holidays, when the students will give their undivided attention to the subjects of medicine and surgery.

Medical Education in New York.

THE following paragraph is from the *New York Medical Journal* of 7th December:—"*The New Cornell Requirements.*—Striving to attain a higher standard, the Cornell University Medical College has not lengthened its course to five years, but has raised the entrance requirements. In the year 1908 and thereafter candidates for admission must be either

Digitized by Google

graduates of some approved college or scientific school, or seniors in good standing in Cornell University or in some other approved college or scientific school, the faculty of which will permit them to substitute the first year of a professional course for the fourth year in arts and sciences, and will confer upon them the bachelor's degree upon the satisfactory completion of the first year of the course in the Cornell University Medical College, or persons who, while not possessing a bachelor's degree, give evidence by examination that they have acquired sufficient education to merit that degree, and such a training as will enable them to profit by the instruction afforded in the medical college.

"In 1909 and thereafter all candidates for admission must have at least such knowledge of physics and inorganic chemistry as may be obtained in a college by a year's course in those subjects when accompanied by laboratory work. In 1910 and thereafter all candidates for admission must possess a similar knowledge of biology. The university announces that, although all approved colleges or scientific schools offer courses in the natural sciences, those courses are not always obligatory, and it has been felt to be unfair to demand a knowledge of those subjects during the first year of the operation of the new requirements. It has also been felt to be unfair to refuse admission to exceptional students of unusual abilities, who have been able to obtain independently an education equivalent to that implied by a degree from a college or scientific school, and to avoid such injustice, a committee will be appointed from the faculties of the different colleges in the university to pass upon the qualifications of such individuals as may apply for admission without the official certificates that would otherwise be requisite. In the circular in which these facts are announced, dated December 2, 1907, it is explained that the four years' medical course is considered as sufficient for the present if it can be devoted wholly to strictly medical subjects, but not if the subsidiary sciences have also to be taught. This seems to be an altogether reasonable position to take."

The Memorandum of the Board of Education on the Medical Inspection of School Children.

No recent legislation is likely to have more far-reaching consequences for the medical profession, nor, indeed, for the nation, than the Education (Administrative Provisions) Act, 1907, which was passed through Parliament in the end of last summer, and which comes into force this month. This Act imposes upon the Local Education Authorities in England the duty of providing for the medical inspection of children after their admission to a public elementary school, and on such other occasions as the

Digitized by Google

Board of Education may direct; and not only this, but power is also given to make such arrangements as may be sanctioned by the Board of Education for attending to the health and physical condition of the children educated in public elementary schools.

Obviously these are very far-reaching provisions, and the Memorandum just issued by the Board of Education on the medical inspection to be carried out deserves the serious attention of all medical practitioners. The Memorandum deals with the organisation of the work, the assistance which may be obtained from subsidiary agencies (such as health visitors and nurses), and the character and degree of medical inspection, and lays down certain regulations as to the frequency of the inspections, the times and places at which they are to be conducted, the registers which are to be kept, and the reports which are to be presented to the Board of Education. The Memorandum emphasises the fact that the aim of the Act is practical, and that the work to be undertaken must not end in compiling statistics, but must lead to schemes for the amelioration of the evils which the medical inspection may reveal. Such amelioration, even if it result simply from greater attention to cleanliness, must be regarded as, in a broad sense, "treatment," but the subject of specific medical treatment is reserved for future consideration, as, indeed, it must be, for the Local Education Authorities will not be able to submit to the Board of Education schemes for the amelioration of existing conditions until these conditions have been studied and reported upon by their medical officers.

Perhaps the greatest public interest—certainly the greatest interest of the medical profession—focuses upon the attitude of the Board of Education to the much-discussed question of the relationship which should exist between the medical department of the Educational Authorities and the ordinary Public Health service. Upon this question the Memorandum speaks with no uncertain voice. It insists that the work to be done is public health work, and should to the utmost extent utilise the existing machinery of medical and sanitary administration.

This attitude has naturally evoked a considerable amount of protest, not always very temperately expressed. Into this controversy we do not propose to enter, beyond saying that, while on the one hand it is obviously essential that the school medical officers and the public health authorities should work together for the common good, on the other hand, the work to be carried on in the schools is not such as medical officers of health are specially fitted by their training and experience to undertake. As Dr. Leslie Mackenzie has well said, "The movement towards the better care of individual infants

Digitized by Google

shows that the era of environmental hygiene is now passing into the era of personal hygiene." The chief qualification for the work which is to be undertaken should be practical experience in the diseases of children. "Some definite experience of school hygiene" is also laid down as a desirable quality for the future officers, but the number of existing medical practitioners who possess such experience is so small, that in most cases this experience must be gained after appointment.

While the Memorandum emphasises very strongly the influence the new Act is likely to have on public health, it scarcely refers to its bearing on education. Yet this aspect is no less important than the former. One has only to consider the revelations of recent investigations as to the enormous proportion of school children who are retarded in their school work by remediable deafness, by refractive errors, and by the existence of adenoids, to see that the treatment of these conditions alone must lead to enormously greater educational efficiency. In this and other respects we shall watch the working of the Act with the greatest interest. In the meantime we may conclude our remarks by asking two questions:—

1. Is not the passing of this Act a challenge to the medical schools to make "Diseases of Children" a compulsory subject?

2. In an Act of such great national importance, ought not provision to have been made for placing at least part of the expense which will be involved on Imperial rather than on local resources?

The Huddersfield Experiment.

HUDDERSFIELD continues to look after the babies, and we have the pleasure once more of recording the results. For the first 39 weeks of 1907 the infant mortality has been 85. For the corresponding period last year the mortality was 138, and the mean for the ten years 1897 to 1906 was 135 for the corresponding 39 weeks of each year.

In carrying on its well-known scheme the corporation is now assisted by two lady assistant medical officers of health. By a special Act the corporation has power to require notification of every birth within 24 hours, and 94 per cent. of the total births are notified to the Medical Officer of Health within the required time. One of the lady health officers calls at the address given to verify the notification. This visit is followed by repeated visits from one of the voluntary lady helpers, of whom there are over 100, in all cases where circumstances seem to call for them. The babies are thus kept under supervision, and skilled advice is sought at once whenever a baby does not appear to be thriving satisfactorily. The entire expense of the scheme is limited to the salaries of the two lady medical officers of health and the costs of

Digitized by Google

printing. The whole has been less than £400 a year. Voluntary subscriptions will be asked for if required.

Dinner to Dr. James. It is the custom when a physician or surgeon reaches the limit of his term of office and retires from the active staff of the Royal Infirmary for his old residents to give him a dinner. In James's case his numerous friends declined to allow his old residents to have the function all to themselves, and on 5th December a large gathering of old students and past and present colleagues assembled to do him honour. The programme was a copy of the title-page of *Punch*, and the artist (an old resident, we understand) had endeavoured with considerable success to convey the impression of James's many-sidedness by giving to each of the sprites around the border of the design the well-known features of the guest.

The toast of Dr. James's health was proposed in eloquent and appropriate terms by Dr. Graham Brown and responded to in characteristic fashion. During the evening Dr. Goodall, in the name of the old residents, presented Dr. James with a silver tankard, and a pendant for Mrs. James, and in doing so recalled many delightful incidents connected with Dr. James's work in the Infirmary.

"Bridge" in Diagnosis. "Bridge" is a game which enjoys considerable popularity with many members of our profession, though it had not occurred to us to make use of it in connection with diagnosis. But the military surgeons who have co-operated to produce *A Manual of Venereal Diseases* have drawn up a sort of "Robertson Rule" to help beginners in the diagnosis of doubtful cases of syphilis.

The reader is advised not to "declare" syphilis unless he holds certain "cards;" it is not stated whether it is an original or a "left" declaration. We give the paragraph in full; we do not agree with all the values, but the experience of those who are reputed experts both at "Bridge" and syphilis is necessarily interesting:—

"*Table of Values in Diagnosis.*—As a guide to beginners (especially 'Bridge' players), the following suggestion is put forward. In this table, values, in accordance with their diagnostic importance, have been assigned to the usual manifestations of syphilis. Do not 'declare' syphilis with less than a total of ten points.

Manifestation.	Value.
"Hunterian chancre	9
Phagedænic chancre	5
Indurated sore (not the result of cauterization) .	5

Digitized by Google

Manifestation.	Value.
Relapsing sore (breaking down after having healed under non-mercurial treatment)	3
Granulating sore on the skin of the penis, which refuses to heal under non-mercurial treatment	5
Characteristic enlargement of groups of lymphatic glands, without other obvious cause	5
Roseolar or macular eruption (drug rashes excepted)	7
Eruptions not recognisable as belonging to any non-syphilitic class	2
Continuous slight loss of body weight not otherwise explicable	5
Anæmia, not otherwise explicable	2
Pyrexia, of simple continued fever type, lasting 2-3 weeks, not otherwise explicable	2
Continuous headaches with exacerbations at night	2
Continuous malaise	2
Mucous patches (if characteristic)	8
Condylomata	8
Alopecia of the syphilitic type	5."

Advertising.

WE are in this country all too familiar with the wonderful claims put forward by advertisers, but they pale before one we have just received from Paris, in which Dr. L. Alliot, Ex-Externe of the Paris Hospitals, tells us that "Carnine Lefrancq is a marvellous food, thanks to which I have already obtained resurrections."

Royal College of Physicians of Edinburgh.

ANNUAL ELECTION MEETING.

AT a meeting of the Royal College of Physicians of Edinburgh, held on Thursday, November 5, 1907, Dr. C. E. Underhill was re-elected President of the College, and Dr. John Playfair Vice-President; and Sir Thomas R. Fraser, Sir John Batty Tuke, Dr. W. Allan Jamieson, Dr. James Ritchie and Dr. R. W. Philip were elected to the Council with the President and Vice-President. The Council subsequently made the following appointments for the ensuing year:—

Peter A. Young, M.D., till January 31, 1908,[1] .
Norman Walker, M.D., from January 31, 1908, . } *Treasurer.*

[1] Dr. Young has intimated his resignation as Treasurer as at January 31, 1908.

Digitized by Google

Harry Rainy, M.D.,	*Secretary.*
D. Berry Hart, M.D.,	*Librarian.*
Sir John Batty Tuke, M.D.,	*Curator of Research Laboratory.*

I. Examiners for the Licence.

First Board.—Dawson Turner, M.D., and Alfred Daniell, D.Sc., *Physics.* Edwin Matthew, M.B., C.M., and John Gibson, Ph.D., *Chemistry.* John Macmillan, M.B., and W. Blackley Drummond, M.B., *Biology. Second Board.*—Sir James A. Russell, M.B., and Joseph R. Whitaker, M.B., *Anatomy.* Percy Theodore Herring, M.D., and A. Goodall, M.D., *Physiology. Third Board.*—Robert A. Fleming, M.D.; Wm. Thomas Ritchie, M.D.; and Stuart MacDonald, M.D., *Pathology.* G. Lovell Gulland, M.D.; Francis D. Boyd, M.D.; and Harry Rainy, M.D., *Materia Medica. Final Board.*—James O. Affleck, M.D.; Chas. E. Underhill, M.B.; W. Allan Jamieson, M.D.; Alex. James, M.D.; Byrom Bramwell, M.D.; G. A. Gibson, M.D.; J. Murdoch Brown, M.D.; J. Graham Brown, M.D.; Alex. Bruce, M.D.; Wm. Russell, M.D.; G. H. Melville Dunlop, M.D.; and R. W. Philip, M.D., *Medicine.* D. Berry Hart, M.D.; A. H. F. Barbour, M.D.; F. W. N. Haultain, M.D.; J. W. Ballantyne. M.D.; James Lamond Lackie, M.D.; and Wm. Fordyce, M.D., *Midwifery.* James Andrew, M.D.; P. A. Young, M.D.; James Carmichael, M.D.; J. Allan Gray, M.D.; R. S. Aitchison, M.D.; and W. G. Aitchison Robertson, M.D., *Medical Jurisprudence and Public Health.* Sir John Batty Tuke, M.D.; T. S. Clouston, M.D.; John Macpherson, M.D.; and John Fraser, M.B., *Insanity.*

II. Examiners for the Membership.

Sir A. R. Simpson, M.D.; Sir Thos. R. Fraser, M.D.; John Wyllie, M.D.; James Andrew, M.D.; Sir John Batty Tuke, M.D.; T. S. Clouston, M.D.; J. J. Kirk Duncanson, M.D.; P. A. Young, M.D.; James O. Affleck, M.D.; John Playfair, M.D.; W. Allan Jamieson, M.D.; Alex. James, M.D.; Peter M'Bride, M.D.; Byrom Bramwell, M.D.; G. A. Gibson, M.D.; D. Berry Hart, M.D.; Sir James A. Russell, M.B.; W. S. Greenfield, M.D.; J. J. Graham Brown, M.D.; A. H. F. Barbour, M.D.; Alex. Bruce, M.D.; William Russell, M.D.; G. H. Melville Dunlop, M.D.; N. T. Brewis, M.B.; R. W. Philip, M.D.; John Thomson, M.D.; F. W. N. Haultain, M.D.; John W. Ballantyne, M.D.; G. Lovell Gulland, M.D.; W. G. Aitchison Robertson, M.D.; John Macpherson, M.D.; Norman Walker, M.D.; William Elder, M.D.; Charles James Lewis, M.D.; Harry Rainy, M.D.; K.

Digitized by Google

Mackenzie Downie, M.D.; Claude Buchanan Ker, M.D.; James Ritchie, Jun., M.D.

III. Examiners for Diploma in Public Health.

First Examination.—W. G. Aitchison Robertson, M.D., *Chemistry.* James Taylor Grant, M.D., *Bacteriology.* Dawson Turner, M.D., *Physics.* Charles James Lewis, M.D., *Meteorology.* *Second Examination.*—Claude Buchanan Ker, M.D., and W. Leslie Mackenzie, M.D., *Epidemiology and Endemiology.* J. Allan Gray, M.D., and Wm. Robertson, M.D., *Practical Sanitation.* Sir James A. Russell, M.B., and James Craufurd Dunlop, M.D., *Sanitary Law, Vital Statistics and Statistical Methods.*

Harry Rainy, M.D., *Registrar.* James Ritchie, Jun., M.D., *Superintendent of Laboratory.* Alex. Sholto Douglas, W.S., *Clerk.* John Wilson Brodie, C.A., *Auditor.* F. C. Nicholson, M.A., *Sub-Librarian.*

Extraordinary Meeting.

At an extraordinary meeting of the College, held on Tuesday, 17th December, the College unanimously appointed Sir A. R. Simpson and Dr. John Playfair to be Representatives of the College on the Board of Management of the Royal Infirmary.

Royal College of Surgeons of Edinburgh.

At a meeting of the College held on 16th inst., the following gentlemen were elected Fellows:—Bryan Foster, M.B., Ch.B.Melb., Hawthorn, Melbourne; William James France, L.R.C.S.E., Bury, Lancs.; Henry Goodwyn, L.R.C.S.E., Bovey Tracey, S. Devon; Henry John Lotz, M.R.C.S.Eng., L.R.C.P.Lond., D.P.H.Camb., Freemantle, W. Australia; Raymond Herbert Price, M.B., C.M.Edin., Captain, Indian Medical Service; John Fordyce Robertson, M.D.Edin., Lerwick, Shetland; Cyril Shellshear, M.B., C.M.Syd., London, W.; Fred. Stoker, M.B., Ch.B.Durh., Wallsend-on-Tyne; Herbert Pank Thompson, M.D.Edin., Edinburgh; Walter Woodword White, M.D.; C. M. M'Gill, L.R.C.S.E., St. John, N.B., Canada; David Percival Dalbreck Wilkie, M.B., Ch.B.Edin., Ardmore, Kirriemuir; and James Wilson, M.B., Ch.B.Aberd., Edinburgh.

Digitized by Google

CERTAIN ASPECTS OF "SIGHT-TESTING," "SPECTACLE-PRESCRIBING," AND OTHER ALLIED SUBJECTS.

By A. RUDOLF GALLOWAY, M.B., C.M., M.A.,
President of the Aberdeen Medico-Chirurgical Society; Honorary Ophthalmic-Surgeon, Aberdeen Eye Institution, &c.

BEING THE PRESIDENTIAL ADDRESS DELIVERED TO THE ABERDEEN MEDICO-CHIRURGICAL SOCIETY ON NOVEMBER 7, 1907.

GENTLEMEN,—In view of the numerous complaints of paucity of patients and superfluity of doctors which we are at present hearing, in view of the low average income, viz., £200 per annum, of the medical man in Britain, I would ask your attention for a short time to-night while I make a few more or less practical remarks concerning certain aspects of subjects which are daily assuming greater importance with regard to the well-being of the nation, and which have, in certain respects, been too long neglected by the medical man to his own professional loss, and at the same time to the great detriment of the public, viz., sight-testing, spectacle-prescribing, and other allied subjects.

Within recent years our educational standard has risen so high, and education has been enforced to such an extent, especially during the earlier period of life before the eye has attained its fully mature state, that optical correction of refractive errors is required very much more frequently than formerly was the case.

Apart from this consideration, however, when we know that of the 42 millions of people in Britain a large proportion require spectacles of some sort—it may be in a large number only presbyopic glasses after middle life—and that even in these the demand is ever increasing for a scientific correction instead of the former method of selecting what the patient thought best—when we also recollect that there are only 400 or 500 oculists, of whom a large number live within the more populous centres, to deal with these wide-spread cases—we then begin to see a large field of usefulness for the medical man which has been almost entirely neglected by him, and we also understand the great activity in recent years of those who call themselves opticians and optologists. It must be common knowledge to all that, even in our own city, one cannot walk far without seeing exhibited in the window of a jeweller, chemist, photographic dealer, or even a

Digitized by Google

toy shop, a notice that eyesight is tested free, and that all kinds of errors of vision are accurately corrected.

Sight-testing diplomas issued by the Spectacle-Makers' Company and other bodies are also exhibited to draw the public to their fate.

Of recent years I have had large experience of cases treated by these diplomatists, and I may say that the only ones I have found to have even the semblance of proper correction were a few with presbyopia only, and in these cases the patients had probably been their own advisers. Of the mistakes made by them some may be only distressing to the patient, while others are unfortunately much more serious. As an instance of the former class, I may mention the almost universal tendency to supply a cylindrical lens when there is no astigmatism, also to correct an amblyopic eye, or one with a corneal nebula or other opacity of media, by a much stronger lens than its fellow.

Of the more serious class I can recollect many cases of spasm of accommodation corrected by the wrong kind of glasses altogether, many cases of high myopia greatly over-corrected with increase of error, and several of these where all power of reading has been lost from changes at the macula accompanying the increasing myopia. I have notes also of cases of toxic amblyopia, of choroiditis, of iritis, which have been treated by glasses, and in which valuable time for treatment has been lost with permanent damage to the eye. At present a patient is attending the Eye Institution with extensive disseminated choroiditis in each eye, and normal refraction—the right eye having vision of only $\frac{4}{60}$ incapable of improvement, the left $\frac{6}{60}$ with recent failure from degenerative macular changes. An optician had given her minus spheres of 2 D to wear some time before she came to me for advice. The most serious cases of all, however, are those important ones of albuminuric retinitis. It is a well-known fact, and one that I can corroborate, that a patient with this affection comes occasionally into the ophthalmic surgeon's hands first of all, and that he will then, within a few months of his death, assert that his general health is excellent. I have known such cases to apply to the optician for glasses, and to have thus lost the only chance of prolonging life which an early recognition of the preceding arteriosclerotic changes would have given. But it is quite unnecessary to say much more in support of the fact that opticians are utterly

Digitized by Google

unsuited for sight-testing. If any further argument be needed, it is found in the fact that it is illegal for such a person to use mydriatics and cycloplegics, and for a large proportion of refraction cases, more especially in children with active accommodation and misleading answers owing to unformed judgment, such drugs are essential. Yet, in September of this year, a well-known philanthropist employed a Paisley optician to examine the inhabitants of a parish not 30 miles from Aberdeen, and on the direct mail route to the north. This energetic individual succeeded not only in examining 80 of the parishioners in 3 hours, but also in fitting up and giving them glasses. While admiring the philanthropy of the donor, one cannot but regret it was not accompanied by more knowledge and judgment. For in Aberdeenshire, at all events, such treatment of eyes is retrograde in the extreme. Within the last three or four years, owing to the increasing skill and medical attention of her doctors, Aberdeen has had to abolish the Inmate Department of the Blind Asylum, for the very good reason that no cases of blindness could be found in Aberdeenshire or neighbouring counties to support it. I may note, in passing, that the usual result of all successful medical effort obtained in this case also, viz., a cessation of any emolument derived from the post. It might be well in one of the new rules of our reconstituted Society to adopt the plan of old Kein Long, Emperor of China, who had four physicians to whom the care of his health was entrusted. A handsome weekly salary was allowed them, but as soon as the Emperor got ill the salary was stopped till he was well again!

This very satisfactory result—the practical abolition of juvenile blindness in our midst, is due mainly to two factors: first, the increasing adoption of Crede's prophylactic measures in dealing with maternity cases, and the early visit to the oculist when ophthalmia neonatorum has manifested itself; second, the very much greater care devoted to the eyesight of children by oculists, and hence the early discovery and treatment of serious fundus diseases.

In the former case, the early visit to the ophthalmic surgeon is not meant to cast any doubt on the capacity of the general practitioner to deal with such patients; but I wish to emphasise the point that eversion of the lids of an infant a few days old, and painting them with 4 per cent. nitrate of silver, is a very difficult manipulation, and one on which the whole success of the treat-

Digitized by Google

ment depends. To show the great diminution in this disease in Aberdeen in recent years, I may mention that I have to treat now only one case, where previously I treated ten; also that during the last two summer sessions of three months each I have been unable to show my class students a typical case of the disease. For the year ending June 30, 1907, out of a total number of 4816 new cases treated at the Eye Institution we had only twelve cases of ophthalmia neonatorum, and only in one eye did serious damage result. When we consider that this disease was formerly responsible for one-third of all the cases of blindness, we have reason to congratulate ourselves on the result obtained. Lately I have suggested that children born at home, and treated by the maternity nurses, should have a drop of a 2 per cent. solution of nitrate of silver put into each eye, which I am sure would be much more effectual than bathing with an antiseptic solution, and would practically abolish the trouble altogether.

With regard to the second cause of the abolition of juvenile blindness, viz., the greater care bestowed upon the eyesight of children, I now wish to make a few remarks. It is in this particular department that the weakness of the optician's pretensions is clearly shown. The accommodation of the juvenile is so active, and his answers to subjective testing so unreliable, that even in the hands of the oculist a cycloplegic is very often necessary. The optician being unable to use this, in spite of his placard that all kinds of sight are tested free, sends his patient most frequently to the nearest charitable institution.

We may, however, in the meantime overlook this, and be thankful that the child is not one of eighty examined and glassed in three hours.

The treatment of optical errors in children has several features peculiarly its own. Unlike similar treatment in adults (in whom a single drop of a mydriatic put into an eye of normally high tension—and such eyes exist—may induce an acute attack of glaucoma), in children atropine may be used freely, provided care be taken to exclude general poisonous effects. (A stronger solution than ½ per cent. is seldom required.) In many children the great prevalence of highish grades of hypermetropia with accompanying tendency to convergent strabismus renders the use of atropine necessary, not only for purposes of estimation of total error, but also for treatment of the straight eye subsequently.

Digitized by Google

There is no more valuable point in the treatment of this class of case than to keep the straight eye paralysed by atropine for prolonged periods. By this means the squinting eye is exercised, its vision retained, and subsequently, in many cases, binocular vision established. Such a case requires lengthy medical supervision and is quite unsuitable for the optician.

Just as ophthalmia neonatorum is almost a thing of the past, so too, by careful treatment of optical errors in children, those very disfiguring squints which used to adorn our streets are seldom seen; the old ones being straightened, no new crop has come to take their place.

The treatment of hypermetropia and convergent strabismus in children may be difficult and intricate, but still more responsible is the management of myopia and its attendant dangers. When we recollect that the percentage of myopia in school children of 5 years of age is only 1·7, and that it rises to 25 per cent. at 18 years of age, we cannot but believe that the school period of the present day is one during which there is a constant tendency for the establishment and increase of the myopic condition. Even in experienced hands the over-correction of myopia is difficult to avoid, and I may say it is the rule in the hands of others. This over-correction leads to additional efforts of accommodation and further yielding of the weak part at the posterior pole, with increasing myopia, which may end ultimately in blindness.

The oculist, by means of his ophthalmoscope, can tell from the appearance of the fundus, and by certain pathological appearances which there present themselves, when a case of myopia is stationary, and when it shows signs of increase. In his hands only, or in the hands of a medical man with ophthalmoscopic knowledge, should the treatment of such a case rest. The rule usually given to select the highest plus and the lowest minus lens which gives equally good distant vision requires both in children and adults many modifications which experience only can suggest. For these reasons the correction of refractive errors in children is tacitly admitted by the optician, in spite of advertisements to the contrary, to be a matter for the medical man. There are, however, numerous adult cases that cannot be properly treated without the use of a mydriatic or cycloplegic. First of all, we have the large class with distressing headache, and asthenopic

Digitized by Google

symptoms, and we very frequently find in them—it is almost the rule—normal vision ($\frac{6}{6}$) with little or no manifest hypermetropia. During my first years of practice I was inclined to think that such complaints were due to some derangement of the general health, more especially as they frequently occurred in rather delicate-looking, nervous subjects, but latterly I have had much success in treating these cases with atropine for two or three days, after which a small hypermetropic error was invariably found, the careful correction of which removed the trouble. It seems to be the rule in such patients that the smaller the error the more acute are the symptoms. The ciliary muscle in the smaller errors is in a state of painful tension, ever striving to correct the focus, while the larger grades of hypermetropia are left to take care of themselves. In a considerable proportion of such cases the tension of the ciliary muscle passes into a state of cramp, and we have the condition of spasm of the accommodation established, which to subjective examination often shows a state of spurious myopia, and is treated frequently as such to the great aggravation of the trouble. The correct treatment here again is a course of atropine, which invariably cures the case for the time being, the final cure depending on a proper hypermetropic correction.

For the treatment of many eye conditions and diseases, we have in atropine a drug the value of which it would be difficult to over-estimate. At the same time, it is the most dangerous drug in eye work that we possess. It reminds me very strongly of chloroform in general practice. In an eye of what I call normally high tension (say T$\frac{1}{4}$), an eye probably small in build, hypermetropic, with rather dense unyielding sclera, the dilation of the pupil crowds the angle of the anterior chamber, blocks the egress of the fluids from the interior through the filtration area, and so causes the death of the eye from a condition of increased tension or glaucoma. In chloroform poisoning the death of the patient, in like manner, results from an impeded escape of the breath from the lungs and respiratory passages—the very slightest check of this nature leading to an over-dose, especially when the vapour is administered by the more concentrated methods.

During my period as anæsthetist in the Royal Infirmary, the only case that gave me any serious alarm was that of a middle-aged man, who, before the operation was begun, ceased to

Digitized by Google

breathe, and immediately showed other symptoms of chloroform poisoning. On trying to pull out his tongue I found that it was entirely adherent to the floor of the mouth and could not be brought beyond the teeth, the result of a severe burn with some caustic liquid. The patient soon recovered, however, on adopting other methods for his resuscitation. This experience and others of a less serious nature have convinced me, and I give my opinion for what it is worth, that in chloroform administration it is the *breathing* we have to watch; just as in atropine used for eye troubles it is the *tension* of the eye that requires extremely careful consideration.

Although a firm believer in the value of proper correction of refractive error in cases such as I have mentioned, I can hardly go so far as some of our colleagues, more especially in America, where diseases such as epilepsy, chorea, melancholia, to say nothing of common dyspepsia, have been successfuly treated by spectacles. Quite recently Dr. Chalmers Prentice of Chicago has secured top place, by asserting that alcoholism can be cured by properly fitted eyeglasses. He instances the case of a drunkard who lost all desire for drink, thirty days after being fitted with proper spectacles.

So far, we must agree, that in this extensive field of sight-testing and spectacle-prescribing there is work, and very interesting work, which medical men only should be called upon to do.

Within recent years educational authorities have begun to move in the matter of sight-testing of children attending school, and we must all agree that this is a step in the right direction; although perhaps we, being somewhat unskilled in their methods, fail to follow them in their latest dodge to compel parents to supply their ametropic children with spectacles. These children are excluded from school, and then the parents are prosecuted for failing to educate them.

During the last four years the London County Council have found among 82,000 school children 22,000 of the older ones defective, and a similar proportion among the younger ones. In Birmingham 35 per cent. were found defective; in Manchester 30 per cent. These figures refer more especially to refractive errors, and when, in addition to this, we recollect that 4 per cent. of all males are congenitally colour-blind, we perceive the extreme importance of early recognition of such abnormalities, in the

Digitized by Google

interest of the present happiness and future well-being of the child. At the present time we attach too little importance to the fact that 25 out of every 100 male children are congenitally and incurably colour-blind, and, I have no doubt, many receive severe punishments for being so. Some years ago, in the systematic examination for several years of Gordon's College Boys, along with the late Dr. Rodger, I found this proportion to hold good. The painful results of early neglect in discovering such a defect are frequently seen at present and are well exemplified by the case of congenital colour-blindness in a trawl captain, which I had the honour to read before the Society last session.

It will be remembered that this man had a wife and young family to support, that he obtained his mate's certificate in 1905, and that he had sailed regularly for four years as skipper of a trawler from the port of Aberdeen. On June 20, 1907, at a Marine Board Inquiry in Aberdeen, having appealed against the decision of the Board of Trade rejecting him from passing an examination as a certificated skipper, he had his certificates as second hand and mate declared forfeited, on account of colour-blindness.

While on this subject, I may remark that it is not very comforting to know that, owing to a threatened shortage of skippers, or other reason, the Board of Trade has recently reduced the period of service as skippers or second hands from twelve months to six (until July 1, 1908), and that, as a result, about 70 skippers who did not submit themselves to the new examination are now sailing regularly from this port, and some of these, I believe, have not even mate's certificates.

I have had under my notice several trawl skippers with myopia of such amount as to render them quite unfit for duty, and who depended upon the constant use of an opera-glass to get over their difficulty. Spectacles they would not wear. Consideration of such cases as I have mentioned gives some colour to the story which I heard from the manager of one of the largest steamship companies in this town, that when a trawler is sighted at sea by any of the larger vessels all rules of the road are disregarded, and the sole endeavour is to get as far away from it as possible.

You will also perhaps remember that at the same meeting of our Society on 4th April of this year I gave notes of the case of a myopic engine-driver in full charge of passenger express trains,

Digitized by Google

and I criticised the lay examination of railway employees. We have another instance recently added to the long list of mysterious railway accidents in the Shrewsbury disaster which occurred on 15th October about 2 A.M., when 18 passengers were killed and many injured. When it is known that such a disease as toxic amblyopia is common among engine-drivers, and that there is no provision made for its proper detection; when it is known that the discovery of any physical ailment or disease is left in the hands of lay railway officials, the mystery ceases, and one wonders how there are not many more accidents than at present. We must be thankful, however, to see some sign of awakening on the part of those responsible. At the Board of Trade Inquiry into the circumstances of the Shrewsbury accident, the president, in examining the locomotive foreman (who seems to be the individual selected in many railway companies to play the part of doctor), remarked that there had been two or three bad accidents lately for which there was no explanation—Grantham, for instance—and asked the following questions:—

"Do you think that drivers ought to be periodically subjected to examinations?"

Witness.—"No. *I* make a point of seeing our express men frequently. *I* have them before me, and question them upon many details. *I* see that they are 'right.'"

Mr. Lloyd-George.—"What do you mean by 'right?'"

Witness.—"I mean capable of taking up their duties."

Mr. Lloyd-George.—"But surely you cannot express an opinion as to physical fitness?"

Witness.—"No."

Mr. Lloyd-George.—"Supposing a man had a weak heart, how are you to know? You do not question or examine him. Of course you would not assume the position of a medical man?"

Witness.—"No."

But this was exactly what the witness was doing. He seemed to be rather proud of it, for on Mr. Lloyd-George asking if there were no weekly scrutiny of drivers, he answered:—

"*We* have to certify they were in good health and fit for employment."

Mr. Lloyd-George, at the inquiry, also elicited the fact that there had been no examination by a medical man of the driver

Digitized by Google

who was killed since his admission to the service about forty years before the accident.

While approving of the action of the educational authorities in the greater attention being paid to eyesight examination in children, I am afraid that there are other questions not at present in a satisfactory state. As a result of such action, the out-patient departments of hospitals and other charitable institutions have been crowded with children sent by the teachers for examination. At the Royal London Ophthalmic Hospital special hours and special assistants have had to be appointed for this work alone. In other towns hospital ophthalmic surgeons have refused to respond to these excessive calls on their valuable time and gratuitous services, and they have been supported in their action by the directors and by the medical press.

Mr. Bickerton, in his out-patient department of the Royal Infirmary, Liverpool, long ago disclaimed all responsibility for refraction cases. Mr. Brudenell Carter says that this duty is not one which the eye hospitals should be called upon to fulfil, and that the public duty of paying for education should include the duty of paying to ascertain the difficulties of conducting it, and the methods whereby those difficulties may be best set aside. The *Lancet* advocates a salaried officer whose time and attention should be entirely devoted to refraction cases (*Lancet*, December 1903). Why not include colour-blindness as well? The *British Medical Journal* suggests a better working union and understanding between the local education authorities and the various hospital staffs. In this connection I may mention as an important fact a contribution of £40 which the directors of the Eye Institution lately received from the Aberdeen School Board in view of the serious epidemic of acute conjunctivitis or "pink eye" with which our out-patient department there has been crowded for over a year. From the commencement of the epidemic in October 1906 over 2000 cases have been treated, which represents an attendance of more than 12,000 cases of conjunctivitis. During the same period the trachoma rate has risen from 2 to 41 per annum.

There is no doubt, with regard to the refraction cases at least, that many should not be treated at a charitable institution, that others should be treated for a graduated fee and so saved from consulting "ophthalmic opticians."

In this connection it may be well to note the very adverse

Digitized by Google

criticism of the *British Medical Journal* of 19th October concerning the Salford Municipal Corporation, which for two years has, through their Assistant Medical Officer of Health, been examining and prescribing glasses for school children at 3s. 6d. a head, numerous children having been thus treated whose parents had an income of over £5 per week.

In connection with the supply of spectacles to these patients there are important points to consider.

In the Report of the Education Committee of the London County Council for the year ending March 31, 1906, the medical officer remarks concerning "Spectacles from Hospital": "Again cases are frequently seen of ridiculous corrections by bifocal lenses, and of children being made to wear spectacles quite unnecessarily —as, for instance, a boy, aged 14, was prescribed bifocal spectacles which cost fifteen shillings," &c.

"Another case seen in the same week was a deaf girl of 11, who had extensive and old scarring of a permanent nature in both corneæ. Recently she had been prescribed bifocals, which cost fifteen shillings, &c."

"On the day of writing this a young girl was seen who, at the same place, had been prescribed bifocals. They cost fifteen shillings, and she cannot manage home work with them. A pair of simple cylinders for constant wear would have been as efficacious, caused her less disturbance in her work, and saved her parents at least ten shillings in cost."

Two points are of interest in this part of the Report:—

1. One feels that if the examiners could, in addition to recommending children to get glasses, have examined the children and prescribed glasses themselves, it would have been much better than adversely criticising the corrections after they were obtained at a charitable institution.

2. One also feels that people able to give 15s. for glasses should not have been directed to go to a charitable institution for examination.

The Report continues:—

"Having regard to the excessive cost of spectacles at hospital price, and to the fact that the law does not yet empower the Council to provide glasses, the members of the Special Schools Sub-Committee decided to form a voluntary association for providing spectacles for children in the London Elementary Schools.

Digitized by Google

When, for family reasons, any child with defective vision cannot obtain glasses, a prescription card of this association is given to the child by the head teacher. On attending hospital the child presents the card to the prescribing surgeon, and if he is willing to help it to get glasses, he fills in the card, which is then returned to the teacher, who sends it to the chairman of managers. The chairman communicates with the optician to the association, who, when sufficient children require glasses, attends the school and fits the frames. The glasses are the property of the association, and are kept at school until paid for, unless the surgeon has ordered them for constant wear, when they are given at once." The Report continues: "The spectacles provided by the association cost, for ordinary spherical lenses, tenpence a pair, as against the hospital prices three or four times as great. For cylinders or their combinations there is a correspondingly great reduction. These frames are good enough for the first pair for any child wearing spheres, and where it is these or nothing, will be of great service educationally to the children. Elaborate frames and glasses of costly construction are almost wasted on such children; to insist on their parents purchasing such, as a result of the hospital advice, is an injustice which to a great extent mars the charity for which the hospital exists. The refraction work done almost necessarily under great difficulties and pressure in the ophthalmic out-patient rooms has been frequently referred to by the oculists. It is neither entirely satisfactory to the hospital authorities nor to the patients, and would greatly relieve the charities if it could be disposed of elsewhere."

In reply to this criticism, the *Ophthalmoscope* for March of this year publishes letters from three well-known opticians in London. These men assert that it is impossible to supply satisfactory glasses at 10d. a pair, that such spectacles have cheap foreign frames, badly fitting, with lenses of a similar nature, and that 1s. 9d. to 2s. is the lowest price at which satisfactory sphericals can be supplied. I consider that we have truth on both sides here. The tenpenny spectacles I have seen, and do not think, especially in children whose noses are difficult to fit, that they are satisfactory. On the other hand, the criticism as to hospital prices for spectacles is perfectly justified, and might have been pitched in a much higher key. It is one thing to offer to supply them at 1s. 9d. a pair and another to do it. Some years

Digitized by Google

ago I investigated this point, and found the average price of steel glasses supplied to hospital patients in this locality to be 6s. About that time, what I may call the gold-filled epoch arrived, and fully one-half of one's hospital patients invested in these showy frames, whose only advantage was that they did not rust, but which fully compensated for this by bending very easily into any shape. Although of little more value than steel, the price charged for these glasses was about twice as much. Again, about once in three weeks a charity patient was found to have invested in solid gold glasses at a price of 30s. to 45s. On asking the opticians who supplied this class of goods from the prescription form of a charitable institution to desist, the reply obtained was that they *had* to supply whatever was demanded, and they refused to do otherwise. I have no doubt, judging from the above report, that this is the trade custom in London, and that the whole question of spectacle-testing and prescribing in hospitals is one which urgently demands attention. What really occurs in many places is, that through a misleading placard or advertisement, offering examination free, a patient is attracted to an optician's shop, thereafter to be sent to the nearest ophthalmic out-patient department, where after the expenditure of time, and also frequently money, in the form of drops, he is provided with a prescription card, which he takes back to the optician, whose hand is free to supply any class of goods and at any price he pleases. The optician is the person who, through his fee-less examination, pockets a handsome profit, and one which, in many cases, would amply repay any time spent by a medical man in examining the case.

Not content with this, however, it will be remembered that last year the Spectacle Makers' Company, and other bodies acting in the interests of certain opticians, introduced a Bill in the House of Lords by Lord Addington for the State Registration of "Sight-Testing" Opticians. Persons registered under this Bill were to be allowed to use titles implying that they were qualified to practise sight-testing, and to charge and recover fees for such practice.

In hospitals where prescriptions are given out, and no supervision exercised over the particular kind of glasses supplied—and these seem to be in the majority—the profit made off hospital patients must be very great, quite enough to remove, in most cases, the constant cry of want of support, if directed into its proper channel.

Digitized by Google

To remedy this anomalous state of affairs, I would suggest:—

1. That no hospital orders for glasses should be sent to an outside optician, unless under a firm contract as to the price to be charged.

2. Medical men should never send patients for examination to a non-medical examiner.

3. Private prescriptions should be sent to those opticians who sell glasses by doctor's prescription only. Unfortunately such a firm does not exist locally, but may be patronised in London, where, as a matter of fact, the great majority of orders *are* executed.

4. The next best course to pursue is to send prescriptions to those opticians who do not advertise sight-testing.

5. No re-testing of the patient by the optician to whom the order is sent should be tolerated. I have had several complaints of this nature, and suppose that it is done for self-instruction in the art of prescribing.

6. There is no doubt that the General Medical Council should be of more use to the medical profession in questions such as this than it has been in the past, and under our new constitution not only this instance but many others of illegal practice might be considered.

7. But the one thing that would very shortly dispose of the whole matter to our complete satisfaction would be if the medical man, in addition to the specialist, would take up the study of refraction. With his intimate training in matters medical, with his ophthalmoscope to reveal the secrets of the fundus, his standing would be on a different level altogether from that of the optician, and this the public would soon recognise.

But you may say that the busy medical man has no time for refraction cases. There is a general belief that they are a most tedious class of case, and run away with much time. This is far from being true; perhaps the first dozen cases or so may belong to that category, and certainly to study refraction from book descriptions is almost hopeless. But among my students I find that an actual demonstration of retinoscopy on three or four cases is sufficient not only to excite their interest for the time being, but to make them reliable retinoscopists before the end of the session. After this first stage is over one can tell by a single glance, preferably with the plane mirror, the refraction of any eye, and so reliable is this method that after some practice one can order

Digitized by Google

the proper correction without even wasting time with test types. In children, before they know their letters, this method is specially valuable, and can be absolutely relied upon.

For refraction cases, I am no believer in that fearful and wonderful instrument the ophthalmometer, about which one hears so much at present. Apart altogether from considerations such as price, which is about £20, and also the abject terror, with vocal accompaniment, which such an instrument would cause in the case of a child—apart from these questions, I would as soon try to shave myself by means of a telescope and a mirror on a dark winter morning as use such an instrument for refraction-testing.

It is a much simpler matter than that, and one which, I am sure, would occupy no more time, in fact, considerably less, than the examination of a chest. The results obtained are also usually much more satisfactory both to doctor and patient in the case of the eye. In addition to this, the greater facility in the use of the ophthalmoscope, along with the greater knowledge obtained of the fundus appearances, and of the healthy appearance or otherwise of the retinal vessels, would be of immense benefit to the medical man, and make him much better fitted to discharge his general duties. A mistake which is still met with occasionally, is telling a patient there is cataract, when the increased visibility and yellowish colour of the pupil is due to senile sclerosis of the lens. A single look through the ophthalmoscope would reveal absence of opacity in the lens, and prevent such a mistake being made.

In estimating the refraction of a patient, the method by using the plane mirror is undoubtedly the best, the most accurate, and the least troublesome. On throwing the light into the eye from one metre distance, the pupil of a normal eye shows a bright fundus reflex and the slightest "with" shadow moving quickly across that reflex on rotating the mirror on a vertical, horizontal or inclined axis. The greater the ametropia the less bright will be the reflex, the slower and denser the shadow—the "with" shadow indicating hypermetropia, and the "against" shadow myopia with the plane mirror. So also inequality or dissimilarity in the movements in meridians at right angles to each other indicate the existence of astigmatism. By placing a trial frame on the patient, and inserting appropriate lenses, the movements

Digitized by Google

of those shadows are corrected, the lens which gives the normal appearance above mentioned being the measure of the patient's ametropia.

In hypermetropia the shadow is left just short of reversal. In myopia the lens which just reverses the shadow is the correct one to order. During the retinoscopic estimation the patient must, especially if a cycloplegic has not been used, look at a distant point—usually some object on the opposite wall of the room—the visual axis of the eye under examination passing as near the examiner's head as possible. This method of retinoscopy is a very beautiful one, is very accurate, and at the same time easily mastered. If the examiner should decide to corroborate his results by means of the test-types he should, before doing so, examine the fundus by means of the indirect method, in order to discount any lesion which may possibly exist there and interfere with his result.

In addition to estimating the patient's refraction, it is not only advisable, but necessary, in certain cases, for the doctor to have some knowledge of spectacle-fitting, in order that he may obtain a satisfactory result.

In many of those cases of latent hypermetropia with habitually over-taxed ciliary muscle it is essential that the patient be kept under observation; the giving of a prescription to such a person and never seeing him or her again has brought much discredit upon doctors' examinations for spectacles.

As we are situated here it is essential, if prescriptions be given, that the glasses be examined and checked thereafter, for most extraordinary mistakes are frequently made. I have had − 8 D given instead of − 3 D, although my writing was perfectly legible. The result of such a correction upon the feelings of a patient after having paid his fee for the examination, may be better imagined than described. Luckily for me, in this particular instance, the patient came back with the glasses and the mistake was discovered. Another instance of gross carelessness is in the case of a cylindrical correction with the axis inclined, where the front of the lens is turned towards the back or where the lens gets half a turn on its axis. This, of course, places the cylinder in a wrong axis, and may cause great discomfort. This particular type of mistake has occurred with me so often, in spite of representations made to the opticians, that I am very much

Digitized by Google

inclined to take the whole responsibility of such cases in my own hands and to re-examine at frequent intervals. Even although one checks such corrections when first ordered, after the first little repair necessary to the frame one finds the lens in wrong position. In the case of an adult the mistake is often soon discovered; but in the case of a child, who has frequently to wear the glasses under stern compulsion, much and serious damage may be done. I have had such a child brought to me quite broken down in health with constant headache, after being made to wear such wrongly-inserted lenses for a period of two or three months.

In the case of the higher-power lenses, and in bifocal spectacles, the fitting is a thing which the doctor alone can do properly. To write out minute measurements, even supposing they were understood and followed, would take up much more time than placing a numbered frame on the patient and ordering from that.

In the following cases also much discrimination must be used:—

1. The patient who has a friend in a jeweller's shop or drug store who wishes to obtain the order.

2. The patient who wishes to patronise the Civil Service Stores in London.

3. The patient who deals with an optician in Paris.

In these cases, of course, one can have no possible guarantee or assurance that the correction one orders will do good to the patient or credit to oneself.

In the following type of case also, which is of frequent occurrence, it is advisable to actually fit a frame to the patient's nose —the young lady beautiful, who, without this fitting, takes your prescription for pince-nez to the optician only to be rudely told that she has "no nose for eye-glasses!"

The following extract from *American Medicine* shows that the questions of which we have spoken are assuming great importance in other parts:—

"All over the United States, and, indeed, all over the world, the opticians are establishing periodicals and schools, and are moving Legislatures, as much of heaven and earth as they can, for the privilege of practising ophthalmology without a medical education or licence. Their contention is, of course, the humorous one that error of refraction and muscle imbalance have no relation to diseases of the eye, and that to themselves should therefore

Digitized by Google

be left the practice of testing and prescribing, as well as making glasses. The claim is the sheerest impertinence and error. Every case of refraction is, or may be, inextricably bound up with diseases of the eye and of the general system. As well might the maker of trusses pose as a surgeon whose specialty is hernia, or a maker of pessaries and forceps call himself a gynæcologist. The best proof of the absurdity of the aspirations of the optician is, that no glasses ordered by them are ever correct. Among thousands, not one will be found mathematically or optically answering the patient's needs. They cannot and dare not use a mydriatic, unless they hire some scapegrace physician to prostitute his profession, and without such help, in the vast majority of cases, there can be no accurate diagnosis of errors of refraction. These men are in reality seeking to practise medicine without studying medicine. The guilt at least for their vogue and pretensions lies at the door of the medical profession, which still ignores the many and profound inter-relations between errors of refraction and disease local and general. All this strange neglect will, in the future, have to be atoned for by long and laborious struggle of the profession to undo the evils we are now permitting to become entrenched in malicious customs and laws."

With regard to our own country, the *Ophthalmoscope* for January of this year quotes the letter of an ophthalmic surgeon to the *Lancet* of the previous 13th October, as follows:—

"I have during the last few months had the following cases through my consulting-room. Two of hemianopsia with cerebral tumour, since dead, both losing six months of invaluable medicinal opportunity whilst having spectacles provided and changed by opticians whom they had unfortunately consulted; one of diabetic cataract, nine months under an optician with three changes of expensive spectacles; one of optic atrophy, five months under an optician with three changes of spectacles. One lady, whom I operated upon for cataract (double—could not count fingers with either eye) was, four months before, carefully examined by an optician 'in a dark room' and solemnly assured that there was nothing the matter with her eyes, but that her pride was preventing her from wearing the necessary spectacles."

The editor of the *Ophthalmoscope* commenting on this says, "Surely it is about time that the question was settled whether it were not better for ophthalmic surgeons to become opticians as

Digitized by Google

well, in order, if possible, to protect the public from the educated incapacity of this spreading charlatanism."

It is well, then, to know how to proceed in any case where spectacle-fitting is thought necessary. Just as the belief that refraction-testing occupies much time is a mistake, so also is the opinion one might be inclined to form at first—that spectacle-fitting must be much more tedious.

The principal firms who supply spectacles by prescription have a set of numbered frames, and all that is necessary is first to calculate the inter-pupillary distance. For this purpose a number of intricate mechanisms (just like the ophthalmometer in estimating refraction) have been invented, whose main use is to further empty the pocket of the unsuspecting doctor, and fill up heaps of his spare time. All that is needed for this calculation is a wooden inch or centimetre measure, which is laid horizontally across the bridge of the nose, its lower edge just on a level with the upper pupillary borders. The patient's eyes fix the examiner's forehead at arm's length distance and the inter-pupillary distance is read off the rule. For reading-glasses $\frac{1}{16}''$ less, and for distance $\frac{1}{16}''$ more, may be ordered. At the same time, it is important to remember that in most cases of hypermetropia it is better to give a smaller rather than a larger P. D., for then one gets a slight prismatic effect to relieve convergence by causing the patient to look through the lenses slightly outside their centres. In a similar way, in myopic cases, and especially those of high grade, it is very important to order rather a larger inter-pupillary measurement, so that the lenses may be looked through a little inside their centres, and the same prismatic effect be obtained.

In cases of high myopia this little point is valuable, for it is in this eye with too long antero-posterior axis and yielding sclera, at the posterior pole that relief must be given to the act of convergence.

The measurement for the centres having been obtained, frames will be found in the series supplied by the makers, varying from 2″ up to $2\frac{1}{2}''$. In certain exceptional cases centres of $1\frac{3}{4}''$ in children, and up to $2\frac{3}{4}''$ in adults, may be required.

The next point to consider is the type of the patient's nose, whether more or less straight in outline, or with high bridge. For the former shape, what is called the saddle or W. bridge is best suited. For the latter, the crank or C. bridge answers best. In either

Digitized by Google

case, by selecting a frame of suitable centres and placing it on the patient, the height of the bridge with regard to the horizontal line and its position in front of, behind, or at the same plane as the lenses, is soon decided. The nose-span may, if necessary, also be given by means of a neat pocket-measure. If a suitable frame be in the box, the number only need be mentioned with a note as to the kind of metal required, and whether sides are straight or curled. In special cases additional measurements with regard to the planes I have mentioned are given.

Eye-glasses are ordered much in the same way, in the form of horizontal pince-nez, more especially for astigmatic cases, or clips; the principal point with regard to eye-glasses being to make sure that they will stay in position without undue pressure, and this can be done only by actual trial.

If, by consideration of the facts I have mentioned to-night, we, as a society of medical men, be led to more clearly define our position with regard to the public, to more carefully guard our heritage of medical skill and knowledge from the baneful influence of would-be usurpers, then my object in giving this address will be fully accomplished.

I am much indebted to the *Ophthalmoscope* for information concerning the optician question in the South, and also to Grimshaw's *Eyesight and Eyestrain.*

THE ACTION OF CERTAIN SALTS OF FORMIC ACID ON THE CIRCULATORY AND MUSCULAR SYSTEMS.

By ALEXANDER GOODALL, M.D., F.R.C.P.,

Lecturer on Physiology, School of Medicine of the Royal Colleges; Examiner in Physiology to the Royal College of Physicians, Edinburgh;

and

ISABEL MITCHELL, B.Sc.,

Carnegie Demonstrator of Physiology, Medical College for Women, Edinburgh

(From the Laboratory of the Royal College of Physicians, Edinburgh).

I. Introductory.

The formates at the present time are receiving much notice. Points of interest are associated with their chemistry, and in

Digitized by Google

the realm of therapeutics no up-to-date tonic is complete without them. It has been claimed for them that they stimulate the heart, vessels, bladder and alimentary canal; that they increase the appetite, abolish fatigue, and exert a tonic influence on muscles. One enthusiast suggests that for the latter reason formic acid should replace alcohol among the working-classes. It has been stated that the formates are powerful diuretics; that they conserve youth, delay senescence, and that they cure rheumatism, tremors and pneumonia. When administered to rabbits they increase their vivacity, while the endowment of the ant with formic acid explains its industry.

The local application of formic acid is said to cure lupus and inoperable cancer, and it has been recommended as a preservative of food. The physiological action of substances alleged to be possessed of so many of the attributes of an elixir of life seemed to us to be worth investigating.

The literature on the subject is for the most part unsatisfactory. The work of Clément[1] and Garrigue[2] can only be described as that of wild enthusiasts. Huchard,[3] however, to a certain extent confirms their results, though he does so in more restrained phraseology.

A much more careful piece of work is that of Fleig.[4] In the first part of his paper he criticises his French confrères so unmercifully and so thoroughly that he leaves subsequent critics very little to say. Indeed, had Fleig's paper received the attention it deserves the formates would never have attained the position in fashionable therapeutics they now have. Fleig immersed exposed loops of intestine in animals in Locke's fluid and noted the movements. Formate of soda added in varying proportions never affected the contractions in amplitude, frequency, or rhythm. Experimenting with the isolated heart of rabbits he never obtained an excitor or reinforcing effect due to sodium formate. On the contrary, concentrated solutions caused toxic effects, lessened amplitude, diminished frequency and arhythmia.

In the case of a nearly exhausted heart, however, calcium formate acted as a stimulant, just as any calcium salt would. The contractions of the gastrocnemius of rabbits set up by induction shocks were not affected by sodium formate.

Nerve energy direct and reflex was not stimulated by sodium formate. Ergographic records, carefully carried out, were negative

Digitized by Google

in Fleig's observations, and he ascribes the results of Clément and Huchard to the effects of training and suggestion.

Among the purely clinical records the only observations of importance are those of Croom[5] in 1906, and Ker and Croom,[6] published last June. They have given formic acid to patients suffering from diphtheria, and conclude that the results they obtained are distinctly encouraging, particularly in relation to the occurrence of cardiac failure and paralysis. They, however, themselves admit that standards of comparison for its merits are difficult to obtain in such a disease. They cannot confirm the diuretic effect observed by Clément and Huchard, and in this particular standards of comparison are definite. While their general verdict on formic acid is favourable, it is expressed with an amount of Scotch caution which contrasts strongly with the enthusiasm of the French advocates.

The salts we employed in the following experiments were those of sodium, potassium and calcium. In many instances, however, the action of the two latter was evidently affected, sometimes to a preponderating extent, by the metallic ion, so that the bulk of our later investigations were carried out with the sodium salt.

A few observations were made with formic acid, but its powerful local nocuous effects in causing tissue necrosis and increasing coagulability of the blood obviously rendered it unsuitable for such investigations as we wished to carry out.

We may note in passing that the formic acid, even in dilute solution, has a local effect on muscle. The muscle becomes more translucent and acquires a curious glazed appearance.

II. Observations on Animals.

1. *Effects on Blood Pressure.*—Observations were made on 14 rabbits, fully anæsthetised with ether. In most cases several salts were employed. Tracings were taken from the left carotid, and the solutions were injected into the left jugular vein. The vagus nerves were cut in the great majority of cases. The doses varied from 10 to 20 m. according to the weight of the rabbits.

Sodium Formate.—

Injection of a 1/500 solution had no effect.

Injection of 1/100 solution in 4 instances, and of 1/50 solution in 2 instances, had no effect.

Digitized by Google

Injection of 1/25 caused a very slight fall of pressure in 3 cases; but in one instance had no effect.

Injection of 1/10 caused a slight fall, with immediate recovery in 5 cases.

Saturated solution caused a fall of 64 mm. of mercury, followed by a gradual rise to normal.

Potassium Formate.—

Injection of 1/1000 caused a slight fall of pressure, with immediate recovery.

Injection of 1/100 caused a fall of pressure, with recovery in 3 cases, and was negative in 3 cases.

Injection of 1/25 in all of 3 cases caused a very definite fall, with recovery gradual and not always complete.

Injection of 1/10 in all of 4 cases caused a fall practically to zero, and was immediately fatal in 3 cases. The fourth animal recovered only after artificial respiration.

Calcium Formate.—

Injection of 1/500 had no effect.

Injection of 1/250 had no effect.

Injection of 1/100 caused a slight fall in one case, a slight rise in another, had no effect in a third, and stopped the experiment by clotting in two instances.

Two injections of 1/50 had no effect.

Injection of 1/25 caused a slight fall, with recovery in 2 cases, and had no effect on a third.

Two injections of 1/10 (saturated) solution tended to cause a slight rise. In one case a slight fall was caused. In each case clotting occurred and prevented further observations.

Formic Acid.—Two injections of 1/50 were made. In each case, after a preliminary fall and recovery, there was a long and gradual fall.

These experiments indicate that sodium formate has little effect on the blood pressure, unless it is in fair concentration. Strong solutions are definitely depressor.

Potassium formate is slightly depressor in dilute solutions, definitely depressor in moderate concentration, and usually fatally inhibits the heart in strong solutions.

The experiments with calcium were less definite, but they

Digitized by Google

probably warrant the inference that the more dilute solutions have a slight depressor effect, and that concentrated solutions tend to raise the pressure.

The general effect of the acid in the two experiments was depressor.

The want of similarity in the action of the different salts is to be explained by the influence of the metallic ion. The true formate effect is shown in the case of the soda salt to be depressor.

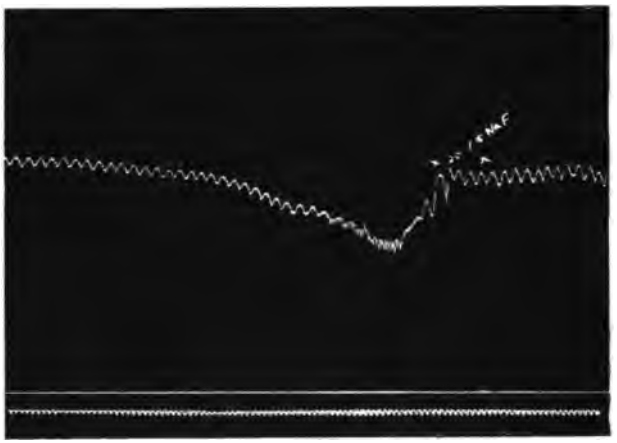

FIG. 1.—Blood pressure tracing from left carotid of rabbit, showing fall of pressure following the intravenous injection (between the two crosses) of 20 m. of sodium formate (1 in 5). Trace reads from right to left.

This depressor effect becomes enormous when added to the preponderating potash effect, while it tends to be obscured altogether when opposed by the stimulating action of calcium.

2. *Observations on the Blood-Vessels.*—These experiments were carried out on pithed frogs. A cannula was tied into the aorta and Ringer's solution was allowed to flow into it from a reservoir in which the fluid was kept at approximately the same level. The salt to be investigated was added to the Ringer's solution in known proportions. After flowing through the vessels the fluid escaped from a cut in the sinus venosus, and eventually dropped from the animal's toes. By such an arrangement any change in the calibre of the vessels affects the rate at which the drops fall. We used a

Digitized by Google

graphic method for recording the drops. They were allowed to fall on a piece of tin-foil attached to the long lever of a receiving tambour. The movements were transmitted to the lever of a recording tambour and were marked on the smoked paper of a kymographion. Time intervals were recorded by means of an electric marker. After a salt had been perfused the vessels were again perfused with Ringer's solution only. Those experiments, in which the return rate most closely approached the original rate, were obviously the most satisfactory, but a failure to obtain a return rate similar to the original does not necessarily invalidate the observation. Sixty-six experiments were carried out. The following is a typical example:—

Frog perfused with Ringer's Solution.

Original Rate . . .	20 per minute.

After the addition of 1 *in* 1000 *Sodium Formate.*

In 30 seconds . . .	22 per minute.
In 60 seconds . . .	24 „
1 to 3½ minutes . . .	28 „
3½ to 5½ minutes . .	26 „
5½ to 6 minutes . . .	24 „
6 to 7 minutes . . .	22 „
7 to 10 minutes . . .	20 „
10 to 14 minutes . .	18 „

Ringer's Solution only.

14 to 19 minutes . .	16 per minute.
19 to 20 minutes . .	18 „

With a few exceptions it was found that all the salts in all the dilutions used first caused a dilatation followed by constriction.

In 15 instances (7 potassium, 4 soda, 4 calcium) there was no dilatation, and in 10 instances (8 soda, 1 potassium, 1 calcium) no constriction occurred. In nearly every case the dilatation began within 3 seconds, never later than 30 seconds, and gradually approached its maximum. The constriction followed in from 17 to 480 seconds, usually about the expiry of a minute and a half. Although the intervals of time at which the dilatation and constriction occurred varied within very narrow limits, it seemed to us that in collating our results to select arbitrary intervals and state

Digitized by Google

the conditions then found would not correctly indicate the result of our experiments. We therefore chose the maximum amount of change in each case.

The results are tabulated as follows.

The number of drops is that counted in 30 seconds.

Sodium Formate, 1 *in* 1000.

Experiment.	Original Rate.	Maximum Dilatation Rate.	Maximum Constriction Rate.	Return Rate.	Percentage Rate.	
					Dilatation.	Constriction.
1	108	127	99	99	117	91
2	20	22	14	19	110	70
3	19	19	14	19	100	73
4	33	47	16	...	142	52
5	136	151	114	130	111	83
6	12	16	10	10	133	83
7	142	...	115	171	100	81
8	38	56	56	56	145	100
9	34	37	12	12	109	35
			Average . .		118	74

Sodium Formate, 1 *in* 500.

10	99	104	77	77	110	80
11	19	23	19	19	121	100
12	19	23	19	19	121	100
13	8	9	5	6	112	62
14	68	130	...	120	191	100
15	10	...	8	...	100	80
			Average . .		126	87

Sodium Formate, 1 *in* 250.

16	77	96	71	71	124	78
17	19	26	19	19	136	100
18	19	25	16	16	131	84
19	7	10	7	7	142	100
			Average . .		133	90

Digitized by Google

Sodium Formate, 1 *in* 100.

Experiment.	Original Rate.	Maximum Dilatation Rate.	Maximum Constriction Rate.	Return Rate.	Percentage Rate.	
					Dilatation.	Constriction.
20	20	...	2	10	100	90
21	71	75	60	60	105	84
22	19	25	18	18	132	94
23	16	21	5	11	131	69
			Average . .		117	84

Sodium Formate, 1 *in* 50.

24	60	180	60	60	300	100
25	18	24	10	18	133	55
26	11	19	9	9	181	81
			Average . .		204	78

Sodium Formate, 1 *in* 25.

27	60	166	60	60	276	100
28	18	29	4	...	161	78
29	9	11	4	...	122	56
			Average . .		186	78

Sodium Formate, 1 *in* 10.

30	5	7	...	6	140	100
31	19	39	12	15	200	63
			Average . .		170	81

Potassium Formate, 1 *in* 1000.

32	188	...	125	136	100	66
33	10	11	7	10	110	70
34	171	...	129	156	100	75
35	56	...	48	56	100	85
36	45	47	39	42	104	86
37	60	67	36	55	112	86
38	33	46	17	26	139	51
39	9	12	10	9	133	100
			Average . .		112	77

Digitized by Google

Potassium Formate, 1 *in* 500.

Experiment.	Original Rate.	Maximum Dilatation Rate.	Maximum Constriction Rate.	Return Rate.	Percentage Rate.	
					Dilatation.	Constriction.
40	6	11	5	7	183	63
41	120	148	36	120	123	30
42	42	44	18	38	104	41
43	44	59	36	55	134	81
44	50	59	47	50	118	94
			Average . .		132	62

Potassium Formate, 1 *in* 250.

45	8	8	3	8	100	37
46	30	34	7	26	113	20
47	55	...	25	40	100	45
48	50	57	39	51	114	78
			Average . .		107	45

Potassium Formate, 1 *in* 100.

49	26	34	2	20	130	17
50	40	...	21	...	100	52
			Average . .		115	34

Potassium Formate, 1 *in* 50.

51	20	...	3	...	100	15

Potassium Formate, 1 *in* 10.

52	25	29	13	19	115	52

Calcium Formate, 1 *in* 1000.

53	130	...	10	...	100	8
54	10	...	6	8	100	60
55	156	158	65	68	101	41
56	56	...	4	58	100	7
57	51	93	41	52	183	81
58	50	58	37	46	116	74
			Average . .		116	45

Digitized by Google

Calcium Formate, 1 *in* 500.

Experiment.	Original Rate.	Maximum Dilatation Rate.	Maximum Constriction Rate.	Return Rate.	Percentage Rate.	
					Dilatation.	Constriction.
59	50	60	23	49	120	46
60	19	30	12	15	160	78
61	27	36	24	27	133	88
62	7	10	5	7	142	71
			Average . .		139	71

Calcium Formate, 1 *in* 250.

63	15	20	...	15	133	100
64	8	8	3	...	100	37
65	15	19	11	7	126	57
			Average . .		120	64

Calcium Formate, 1 *in* 10.

66	7	10	5	...	142	71

These tables show (1) that the sodium salt caused the greatest individual amount of dilatation, that the average amount of dilatation is greater than in the case of the other salts, and that sodium formate has the least constrictor effect.

(2) The potassium salt caused the greatest individual amount of constriction, the greatest average amount of constriction, and the least individual and least average amount of dilatation.

(3) The calcium salt had effects on the vessels intermediate between those of sodium and potassium.

(4) As regards strength of solution it is seen that in the case of soda and calcium the amount of dilatation increases in proportion to increasing strength of solution, and that the amount of constriction diminishes with increasing concentration.

In the case of potassium the amount of dilatation remains constant for all the concentrations used, while constriction increases with increased strength of solution.

3. *Observations on the Heart.*—(A) *Perfusion Experiments.*—Frogs' hearts were used. The perfusions were carried out by

Digitized by Google

means of Schafer's heart plethysmograph. In some of the cases instead of using the piston recorder of Schafer's instrument we attached the very delicate and simple volume recorder recently introduced by Dixon.[7]

Sodium Formate.—Seven observations were made with 1 in 1000 solution.

In two cases results were negative.

In three instances the heart was slowed and then stopped in diastole.

In two the heart became irregular and was stopped in diastole. In the latter five cases the force of contraction was greatly diminished.

Sodium formate 1 in 100 either perfused through the heart or merely painted on it, rapidly decreased the force of contraction, and in four out of five cases stopped the heart in diastole.

Sodium formate 1 in 10 caused great irregularity, with frequently an increased rate and speedy stoppage in diastole.

Potassium formate 1 in 1000, 1 in 500, and 1 in 100 caused irregularity, diminished force, and stopped the heart in systole.

Potassium formate 1 in 10 immediately stopped the heart.

Calcium formate 1 in 1000 augmented the force of the heart, sometimes caused irregularity, and soon stopped it in systole.

Solutions of 1 in 500, 1 in 100, and 1 in 10, slowed and stopped the heart in systole.

Formic acid 1 in 2000 diminished the force of contraction, and stopped it in systole.

Hearts perfused with formic acid showed a remarkable increase in translucency, in some cases becoming glassy-like and almost transparent.

Some points of interest emerged in the inter-relationship of the action of these salts. Thus a heart stopped in diastole by sodium formate could sometimes be made to beat again by perfusing calcium formate, but only for so long as the calcium formate was perfused.

A heart brought to a standstill by dilute calcium formate could be made to beat again for a brief period by perfusing strong sodium formate through it.

(B) *Heart Movements.*—These observations were also made on frogs' hearts. After the frog was pithed a hook was passed through the tip of the ventricle and attached by a pin to an aluminium

Digitized by Google

lever writing against a smoked drum. The salts were applied to the heart by dropping the solutions from a glass pipette. Fifteen such experiments were carried out, the results were confirmatory of the foregoing. Thus, solutions of potassium and sodium formate caused arhythmia, followed in succession by diminished rate, diminished force with increased rate, diminished force with lessened rate, and speedy stoppage with strong solutions. The

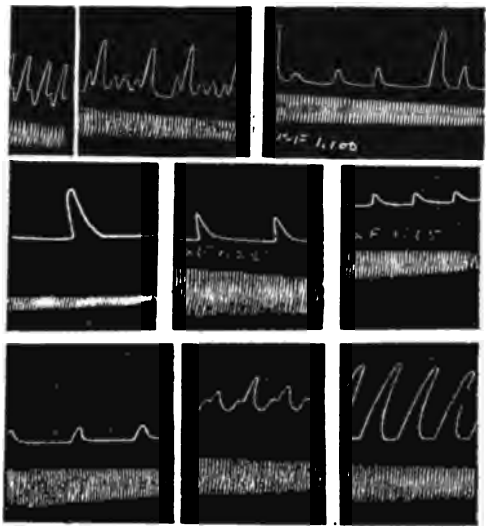

FIG. 2.—Frog's heart trace. 1. Shows effect of painting potassium formate (1 in 100) on the heart 2. Shows effect of sodium formate on a heart nearly stopped by potassium formate. 3. Shows effect of painting calcium formate on the same heart.

potassium salt acted more powerfully than the sodium. Calcium formate 1 in 100 produced slight slowing of the heart only. Solutions 1 in 10 not only slowed the heart but lessened its force of contraction.

The application of calcium formate in several instances caused a return of contraction in hearts stopped by the application of the potassium or sodium salts. The two series of observations indicate that all three salts are toxic to the heart. In the case of potassium formate the toxic action is practically exclusive. In

Digitized by Google

the case of sodium formate a certain stimulating effect, probably in virtue of irritation can also be noted. The effect of calcium formate is mainly that of calcium, the toxic effects being secondary.

4. *Observations on Muscle Curves and Fatigue.*—The gastrocnemius of the frog was used. The muscle of one limb was made to record the simple contraction induced by an induction shock of optimum strength, and was then either injected or painted with a

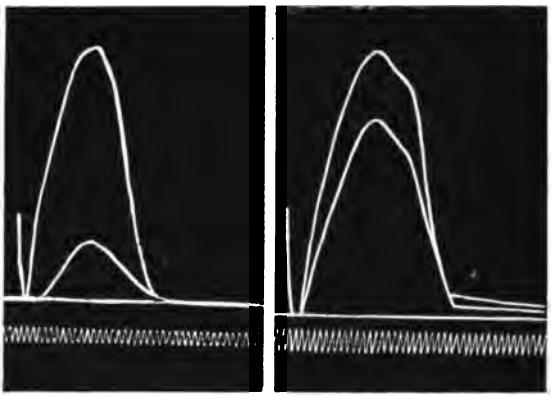

FIG. 3.—Left figure shows gastrocnemius contraction before and after injection of sodium formate (1 in 100) 3 m. into the muscle. Right figure shows the contraction of the opposite gastrocnemius before and after injection of 3 m. of Ringer's solution. The second curve is the smaller in each case.

formate. The corresponding muscle of the other limb was treated similarly with Ringer's solution. The same apparatus was used for the two limbs, the order of making the contrasted observations being alternated in successive experiments. In every case the muscle was loaded with 30 grammes.

It may be mentioned here that in no case did the Ringer's solution materially alter the height of the curve or the length of the latent period. Only the fatigue effects therefore need be stated.

Sodium formate 1 in 1000. Muscle injected with 5 m.

Digitized by Google

Curves before and after were the same height. Completely fatigued after 600 shocks. Ringer preparation fatigued but still active.

1 in 100. Muscle injected with 5 m. Curve lowered 1 mm. Completely fatigued after 450 shocks. Ringer preparation showed only lengthening of latent period.

1 in 10, 5 m. Curve lowered 6 mm. Latent period greatly increased. Fatigued after 200 shocks.

Saturated, 5 m. Curve lowered 8 mm. Latent period increased. Fatigued after 150 shocks. Ringer muscle not affected.

Potassium Formate.—

1/50. Curve lowered 2·5 mm.—fatigued after 400 shocks. Ringer preparation—fatigued after 800 shocks.

1/25. Curve lowered 3·5 mm.—fatigued after 250 shocks. Ringer muscle—fatigued after 600 shocks.

1/10. Curve lowered 5·5 mm.—fatigued after 100 shocks. Ringer muscle—fatigued after 600 shocks.

Saturated.—No response after injection.

Calcium Formate.—The height of the curves was somewhat diminished, but a great prolongation of contraction period became evident, due to calcium effect.

Formic Acid.—1/100 painted on the muscle lowered height of curve by 1 mm. Fatigue occurred after 200 shocks.

Ringer muscle—fatigued after 600 shocks.

These experiments indicate that the effects on skeletal muscle are similar to those on cardiac muscle—namely, that all three are toxic in the order, potassium, sodium, calcium, but that in the case of the latter the toxic effect is subsidiary to the action of the metallic radicle.

III. Observations on the Human Subject.

Although we now felt convinced that the administration of formates might be harmful, we made some observations upon ourselves, upon a lady student and a laboratory boy. Conditions as regards work and exercise were practically constant during the experiments. Three of the subjects were habitual abstainers from alcohol and tobacco: the fourth acquired these virtues for a month previous to the experiments, and during their course. Only sodium

Digitized by Google

formate was used. The dosage was one gramme given thrice the first day, two grammes thrice on the two succeeding days, and once on the morning of the fourth day—a total of 17 grammes.

1. *Subjective Sensations.*—These were absent, except in the case of the student, who either misunderstood, or disregarded instructions and took the salt in an unduly concentrated form, and, in consequence, experienced an increased sense of thirst. No increase of appetite was noticed.

2. *Observations on Blood Pressure.*—These were made for a few

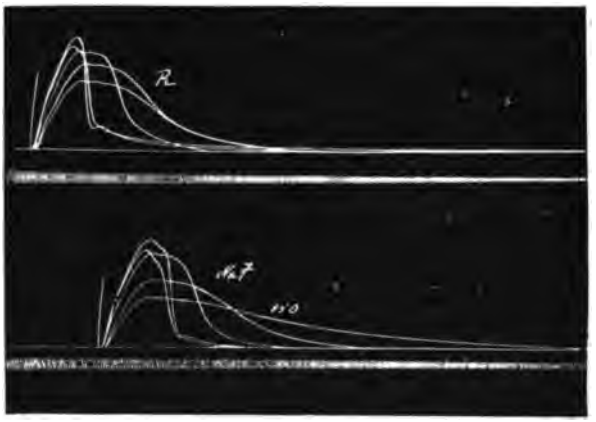

FIG. 4.—Fatigue curves. In the upper trace the muscle was bathed in Ringer's solution ; in the lower, in Ringer's solution containing (1 in 1000) sodium formate. Each 150th curve was recorded. Note the more increased latent period and relaxation period in the formate preparation.

days before, during, and after the course of sodium formate, by means of the Riva-Rocci instrument, the reading being taken when the pulse became imperceptible at the wrist. The variations gave no indication of action on the part of the salt:—

	Day before formate taken.	Fourth day.
F. W.	100	114
J. G. S.	100	90
I. M.	110	98
A. G.	110	114

Digitized by Google

3. *Ergographic Records.*—Mosso's instrument was used. A weight of 4·5 kilos. was raised over a pulley by flexion of the terminal phalanx of the right middle finger every two seconds until complete fatigue occurred.

The time was marked by a metronome beating seconds. Three of the subjects of experiment naturally sustained the weight until the intermediate second struck, the fourth relaxed the muscle immediately after the pull. We thought it well not to attempt to alter this arrangement, and have made no attempt to place the records on an equal basis, as each only applies to the individual in question. It is particularly difficult to get satisfactory ergographic records for purposes of comparison. Training undoubtedly, and suggestion in all probability, play an important part. In order to eliminate the effect of training two of the subjects practised with the ergograph daily until no further improvement occurred. The effects were remarkable. Unfortunately the early records in one case were not kept, but in the other there was an increase to eight times the original capacity for work in three weeks.

In the other two cases a single record was taken immediately before the formate course was begun, and a second record was taken four days later, when stiffness and pain on flexing the arm had disappeared. This method is probably not satisfactory, and it is interesting to note that after the formate course the untrained individuals showed improvement, the trained individuals showed diminution of work capacity.

Results:—

	Before.	After 2nd day.	After 4th day.	After 5th day.	After 6th day.	
F. W. (trained)	2·28	2·0	1·78	1·19	1·79	kilogrammetres
I. M. (trained).	12·68		10·19	...	...	,,
A. G. . .	4·02		4·41	...	...	,,
J. G. S. (contractions not sustained) .	10·23		21·92	...	...	,,

Dynamometer Records.—The observations were made with the right arm held at right angles to the body.

Digitized by Google

	Before Formate.	After.
F. W.	30	29 kilograms.
J. G. S. . . .	34	33 „
I. M.	30	30 „
A. G.	57	55 „

These results all tend to show that in healthy human subjects sodium formate, in the doses given, has no appreciable effect.

Summary.

Formic acid, formate of potassium, sodium and calcium in minimal active doses exert a toxic action on the circulatory and muscular systems. This action is enormously added to by the effect of the metallic ion in the case of the potash salt, and may be obscured by the metallic ion in the case of the calcium salt.

With the exception of calcium formate in strong solution, they all lower blood pressure. They all have a transient vaso-dilator, followed by a vaso-constrictor, action.

They are all toxic to the heart and to skeletal muscle in the order potassium, sodium, calcium, and accelerate rather than retard fatigue.

In the dosage stated sodium formate has no demonstrable effect on the circulatory or muscular systems, or other noticeable effect on the healthy human subject.

Have the formates a place in therapeutics?

In so far as our experiments afford an answer to this question (assuming that the formates are absorbed) we should say (1) that the medicinal use of potassium formate would be unjustifiable; (2) that the effect of sodium formate might seriously impair the strength of a patient already debilitated; (3) that in calcium formate we have a lime salt, freely soluble, and not too unpalatable, which has an action in coagulating the blood both in virtue of its metallic and basic ion.

We venture to suggest that in cases of remote or intractable hæmorrhage it is worthy of a trial.

Digitized by Google

REFERENCES.

1. Clément. *Lyon Médical.* Aug. 3, 1903; Feb. 19, 1905. *C. R. Soc. de. Biol.* March 21, 1904.
2. Garrigue. "Maladies microbiennes, guérison de la tuberculose et du Cancer." 3rd edition. Baillière, Paris. 1903. *C. R. Soc. de Biol.*, 58. 1905. P. 996.
3. Huchard. *Bulletin de l'Acad. de Méd.*, 53. 1905. P. 251.
4. Fleig. *Archiv. Générales de Med.* 1905. Pp. 2753 and 2817. Also *C. R. Soc de Biol.* Mar. 1, 1907. P. 298.
5. Croom. *Edin. Med. Journ.* Oct. 1906.
6. Ker and Croom. *Ibid.* June 1907.
7. Dixon. *Journ. of Physiology*, 35. March 1907.

DIGESTION AND FEEDING IN INFANTS.

By A. DINGWALL FORDYCE, M.D., F.R.C.P.,
Extra-Physician, Royal Hospital for Sick Children, Edinburgh.

VI. THE PRACTICE OF ARTIFICIAL INFANT FEEDING.[1]

IN no other department of medicine are the broad principles which underlie and serve as a basis for the whole superstructure of the art and practice so commonly overlooked and neglected, as in the department of infant feeding. In no other specialty is the personal equation more apt to be ignored; in none is the patient more frequently treated as a case and not as an individual entity; and in none does blind routine procedure hold such sway.

The subject of infant feeding is frequently considered uninteresting, because unknown or misunderstood; unworthy of earnest consideration because, forsooth, the infantile digestive capacity in health is wide and broad. And yet the subject is one fraught with the gravest issues. If we consider the rate of infantile mortality in this country—the preventable infantile mortality—if we realise the facility and rapidity with which death accrues in cases where the boundary lines of digestive health are passed, if we bear in mind that during the first year of life, the body weight is trebled, the various senses are developed, the foundations of the osseous system are determined, the coherence and co-relation of function of all the various systems throughout the organism are initiated, and if we appreciate the liability to organismal infection, the

[1] Read before the Edinburgh Obstetrical Society, December 11, 1907.

Digitized by Google

facility of bacterial invasion by means of the alimentary canal, and the supreme predisposing power which the nourishment exercises over such infection, we cannot but recognise the enormous influence which feeding in infancy exerts over health and disease, life and death, not only during infancy, but throughout the whole course of an individual's life. So much it may be contended is matter of common knowledge, of universal acceptation, and the mere hackneyed reiteration of the trite commonplaces of general elementary medical knowledge. Admittedly so.

But though the infantile digestive capacity be wide, we surely must in each particular case seek for the optimum diet; theory and practice are not one and indissoluble; for the attainment of a satisfactory issue well-regulated and judicial theory must be backed up by consistent practice, and practice must be guided by the general principles of scientific medicine.

And yet it is matter of everyday experience that something has gone wrong in the reflex arc of the science and practice of infant feeding in the case of only too many practitioners. The rift may be in the centripetal influx of knowledge, in the centrifugal course of its application, or in both. With those cases in which extraneous subsidiary, but potent, centres closely related to the baby exert a baneful but all-powerful influence over the actions of the physician, I have naturally nothing here to do.

Sound theory is the *sine qua non*, and to sound theory it is the common privilege of us all to attain. Why reasoning creatures, scientifically trained members of the medical profession, should so frequently throw reason to the wind and indulge in all the vagaries of a disordered mental equilibrium when confronted with the charge of an infant's nourishment is a fact sufficiently bewildering to pass comprehension, were it not for the possibility of lack or inaccuracy of knowledge on the subject.

The subject to the student is awesome and fearful; as a neophyte he thinks in percentages and dreams of varieties of proteid; his whole soul is absorbed in minutiæ; his sense of proportion wanes as his appreciation of comparative trivialities increases; and the weeds of a too luxuriant growth of details exclude the illumination of broad-principled reasoning.

The subject has become encircled by an altogether artificial ring of difficulties and distractions.

The question of diet at all ages is a large one, and the problem

Digitized by Google

difficult to solve; but in infancy the subject, while of supreme importance and controlled by laws corresponding to those in adult life, is curtailed in latitude, and consequently correspondingly simplified and limited in its sphere of consideration.

The diagnosis of the exact dietetic cause and metabolic alteration going to produce the symptoms in any one particular case must of necessity, in the great majority of cases, remain of a more or less vague and ill-defined nature.

To focus this diagnosis as sharply as possible, the resources of clinical medicine have to be extensively employed, and more particularly the greatest of all, accurate observation. In very many conditions in childhood, symptoms are more valuable aids to us than signs, and, I might almost say, impressions than conclusions. The greatest asset of any physician, I think it will be generally admitted, and I personally profoundly believe, is the possession of medical sympathy, medical intuition, or, in other words, the trained capacity of sub-conscious, accurate, deductive, reasoned but unreasoning observation. By this I mean the sub-conscious capacity to interpret aright signs and symptoms incapable of accurate definition, which appeal to no one particular sense, which are accepted as existing by none but those suited to absorb them, but which in such persons indefinably affect and profoundly impress what one may for want of a better term call the medical centre. This sub-conscious power undoubtedly exists in very varying degrees of perfection; it is in every case capable of immense development, and it is only reliable and valuable when carefully developed by accurate observation and founded on accurate knowledge.

In cases of disorder of infantile digestion, accurate knowledge is of course, as in all cases at all ages, essential, but in addition I think it is advisable to lay stress on the importance of accurate observation.

In infancy very much depends on what may be termed "mere" observation and care in examination, and yet it is precisely in cases of infantile digestive disorder, in which such ordinary methods are frequently so valuable, that very often the examination is superficial and the diagnosis consequently so extremely vague as to be nothing more than the definition of the principal symptom.

Successful treatment, fortunately, very frequently is achieved

Digitized by Google

in the absence of even an approximately accurate diagnosis, but such results can hardly be recorded as the achievements of scientific medicine.

As arbiters of the nourishment to be supplied to an infant, we are the fortunate possessors of more or less accurate knowledge as to the natural diet which must be taken as the standard.

In connection with the subject of infant feeding, various distinguished authorities have at different times elaborated procedures along different lines; by the recommendation of novel admixtures, important steps in advance have been made; and with a sigh of thankfulness for an authoritative statement on the subject, clear to the meanest intelligence, the particular doctrine is accepted, and by a certain number of the profession its practice is not only used but most thoroughly abused.

All theories are applicable in particular cases, subject entirely to the individual requirements and capacity; Budin did not recommend whole milk for all babies at all ages; Poynton did not use citrate of soda absolutely indiscriminately. The interrogator who queries, "Do you believe in Nestlé's milk?" "Do you believe in barley water or plain water?" and so on, thereby absolutely stultifies himself.

BOSTON MEDICAL LIBRARY MAR 12 1910

It is a striving after the impossible to attempt to lay down rules applicable to the artificial rearing of every infant: on the addition to well-defined principles of accurate individual observation and examination, all dietetic treatment must essentially depend.

That it is *necessary* in so many cases to have recourse to artificial feeding is, I think, extremely questionable. By means of careful treatment of the mother or baby or both, and with the co-operation of a willing mother, many lactations would be continued which, however, are summarily stopped; on the other hand, we are, I think, justified in saying that a healthy baby will thrive normally when weaned at any age, and even a weakly baby will do well.

In order to approach as closely as possible the constitution of the standard food—natural milk—it is obviously pre-eminently desirable that milk of some kind should be employed as the substitute, and of fresh milks that of the cow is by far the most readily obtainable.

It would seem almost an impossibility to convince mankind in

Digitized by Google

general, and certainly the feminine section of it, that cow's milk alone is wholly sufficient nourishment for a healthy baby up till the period of the first dentition.

Condensed milks, gruels, malted and unmalted foods, proprietary foods of all kinds, are invested in the lay mind—and certainly not exclusively in the lay mind—with mysterious beatific properties: they "satisfy" the baby's hunger, they quiet his cravings, they fatten his body and, presumably, develop his soul, and if digestive disturbance does occur during their employment it certainly would have occurred sooner and been of a more severe nature had he not been so fortunate as hourly to suck in the vivifying fluid as supplied by the excellent firm of Messrs. So-and-so! A most comfortable reflection for kindly solicitous adults of moderately developed reasoning powers, but a somewhat equivocal position for that speck of digesting humanity — the unreasoning infant. The use of these foods or mixtures in the vast majority of cases is an open avowal of ignorance.

I am well aware that many physicians of extensive practice and wide experience constantly employ proprietary foods—in the main along with cow's milk—and I can very well believe that in a great many cases the results are most excellent. Where these excellent results *are* obtained, however, they must be ascribed, I think, to the excellence of the medical sense of the physician and to his store of practical experience. No man obtaining such results can give this or that food indiscriminately. Experience, I imagine, enables him to comprehend the probable digestive capabilities of various infants, and by experience his dietetic régime is ordered. Be it so. But it does not necessarily follow that, because his results are good, his method of feeding is the only one and the best. Such sub-conscious medicine *when successful* can only be directed by experience, and its indulgence during probationary periods is bound to produce discordant results.

Where experience is lacking, observation and scientific principles must wholly regulate our conduct; in all cases their importance must be pre-eminent. In the delicate subject of the artificial rearing of infants we strive for the optimum result, and we consequently must surely strive to know as accurately as possible the means by which that result is to be attained. Simplicity in things dietetic and therapeutic is universally desirable, and in infant feeding is of the utmost necessity if we are on any particular

Digitized by Google

occasion to put our finger on the cause of any special condition. Eminent authorities on the subject tell us that a tea-spoonful of some particular infant food is equivalent to a drachm, and on this we may base our conclusions for the diet; others again tell us that this same tea-spoonful is really equivalent to two drachms or three drachms. The greatest amount of accuracy possible cannot be compared with the only comparative accuracy of the constitution of cow's milk. By the requisite adjustment of the constituents of cow's milk, by the suitable proportionate admixture of milk, whey, cream, milk-sugar and boiled water, we can in the case of a healthy baby altogether obviate the necessity for the addition of extraneous material to it except for therapeutic purposes.

The possession by cow's milk of the anti-scorbutic principle is a fact with which is intimately connected the important question of the heating of milk.

With our present defective supply of milk, heating of some sort is a practical necessity; bacterial impurity necessitates action; and by means of the procedure of scalding we obtain, I think, the highest level of excellence when taking into account both the advantages and disadvantages which result from the various grades of heat.

Scalded I say rather than Pasteurised, because the procedure is more simple; because as a result of its application the tubercle bacillus is killed, which is not the case with Pasteurisation; and because with it the disadvantages dependent on alterations in the milk associated with the application of increasing degrees of heat are practically of a negligible quantity as compared with those of Pasteurisation. Scalded rather than "sterilised," because as a rule the latter procedure is, from the bacterial point of view, totally unnecessary, and the application of the minimum satisfactory degree of heat must be our aim.

Two of these reasons I am well aware are open to adverse criticism: Firstly, is the tubercle bacillus killed by exposure to a heat of rather over 100° C. for about a minute? Secondly, is thorough sterilisation totally unnecessary?

The two, I think, may well be considered together. A very large amount of experimental work has been done on the action of heat on the virulence of tuberculous milk, and it is quite impossible to enter, even superficially, into the subject. I must restrict myself to stating that, from an analysis of the literature, I find that by

Digitized by Google

some authors exposure of tuberculous milk, to a temperature of 80° C. for one minute is found sufficient to kill this bacillus; that by the majority exposure to a temperature of 100° C. for one minute is satisfactory; but that it has not infrequently been found that even considerably higher temperatures were inefficient.

I am, therefore, forced to concede that scalding does not necessarily kill the tubercle bacillus; but I certainly contend that the virulence of the bacillus is thereby immensely diminished. Calmette of Lille has proved that for infantile tuberculous infection to occur from the alimentary canal it is essential that the infecting germs be in immense numbers and constantly present; that, in fact, the resisting power of the infantile organism is, comparatively speaking, extremely high. Tubercle bacilli are almost certainly very frequently present in milk; in the great majority of cases they are present, however, in comparatively small numbers, as it is only in cases of marked disease of the bovine udder in which they abound. By the procedure of scalding, and owing to the consequent loss, or *at least* diminution, of virulence of the bacillus, a satisfactory safeguard is, I think, raised against tuberculous infection from this source.

From the bacterial point of view scalding is therefore a satisfactory procedure; how about the chemical point of view? Is there any object to be gained by subjecting milk to higher temperatures?

The outstanding characteristic of milk which has been exposed to a temperature of at least 100° C. for some considerable time is its diminished reaction with rennin, and the consequent toleration by the infant of abnormal amounts of proteid. Is it desirable that the infant be provided with a milk, comparatively speaking, extremely rich in proteid?

The teaching of the French school, and more particularly the writing of the late Professor Budin, has of late years influenced to no inconsiderable extent the opinion of many physicians in this country, and a certain degree of fashion has arisen in the belief in pure milk. In Paris and throughout France pure milk is given very largely and to the youngest infants with marked success. But an extremely important point, and one very frequently overlooked, is that this pure milk is always treated for ¾ of an hour at a temperature of at least 100° C. As a consequence most important changes take place in the milk, which alter very materially its reactions with the digestive juices. Thus, owing to the large pre-

Digitized by Google

cipitation of calcium salts, the action of rennin is very greatly delayed, and it appears probable that much of the still liquid milk passes through the pylorus before curding can occur. The work of digestion is consequently very largely relegated to the intestine, the part of the alimentary canal which in early infancy is most adequate to cope with it, and the formation of dense rennin coagula is largely prevented. As a consequence also it is probable that an amount of proteid greater than is necessary for full nutrition can be borne without causing digestive disturbance. The fluid also has the advantage of being sterile, but loses a certain value as a fat and sugar carrier. The chief points obviously to be considered in this régime are—(1) The degree of heat applied; and (2) the contention that this fluid in cases where it is satisfactorily stood is, in varying amounts for infants of different ages, the food *par excellence* for the infant; that is to say, that it is preferable to give this fluid rather than modifications of milk which more closely approximate to the standard of maternal milk, even in cases where these latter may prove satisfactory.

While considering these points it is, however, essential to turn our attention in a totally different direction.

Simultaneously with the development in France of a distinctive French school of infant feeding there has developed in America a no less distinctive American school. The teaching of the two is widely divergent, in many points totally at variance.

In America a wave of scientific enthusiasm has carried on its crest workers on this subject to a goal of scientific accuracy and scientific detail, wonderful in structure and irresistible in force of logic. In France pressing national perplexities have necessitated cogent remedial measures, philanthropy and medical science and enterprise have joined hands in the humanitarian propaganda, and successful practical results bear witness to the value of well-directed zeal.

In both countries the same object has been in view; but it has been viewed from totally different standpoints, approached by totally different routes, and so far attained by diametrically opposite measures.

It is impossible not to believe that the work in the one country has to a considerable extent affected that in the other; and it is equally impossible, I think, not to recognise that in either case excessive zeal has outrun sober discrimination and

Digitized by Google

broad-minded reasoning. By American authorities the feeding of an infant is a scientific problem, determined by means of scientific minutiæ, and supervised by means of elaborate scientific calculations; in France it is a process subject to a constant law.

The results in the one case may be designated the achievements of science, in the other the teachings of experience. Both obviously are excellent so far as they go; the lessons in the two cases, though widely distinct, are by no means incompatible; and a discriminating admixture of the teaching of the two schools serves to provide us, I think, with that *juste milieu* which is in practice most certain to lead to successful results.

Science and experience cannot be antagonistic; but imperfect science must be used to control imperfect experience, and *vice versâ*. I would therefore say that the scientific principle of percentage feeding—the modification of cow's milk which renders its composition as nearly as possible equivalent to that of maternal milk—must be accepted in general as the logical basis for the framing of infant feeds; that, accepting this fundamental principle, it has to be recognised that, practically, it cannot be strictly carried into effect in the vast majority of cases; that, simplicity in prescription being of the utmost importance, it is yet possible for us to adhere within limits to the principle; but that, as the digestive capacity of infants varies greatly, and may more particularly vary as regards cow's milk, this principle is one which in each particular case must be entirely subservient to clinical observation and individual idiosyncrasy.

Grounded on such theoretical bases, I contend that scalded milk, modified according to age and the digestive capacity, is the proper artificial food for the infant.

When we consider the very varying digestive capacities of different infants in different directions it is clear that no rules can be formed which will dictate the treatment in any particular case, and yet it is highly desirable and obviously advantageous that the treatment of all cases should be regulated by the same fundamental principles. And, in the first place, if the question of the infant diet is to be a question of medical determination, the ordering of this diet—its prescription—must be along businesslike and professional lines and not more or less haphazard. There is always an advantage, surely, in knowing what you are doing,

Digitized by Google

whether you know why you are doing it or not. The exact amount of nourishment swallowed daily by the infant can hardly ever be accurately known by the physician—too many subsidiary factors enter into the question—but in only too many cases even the approximate amount is absolutely unknown. When such is the case, if digestive disturbance arises, theories as to the original cause of this disturbance must be chaotic, and therapeutic treatment consequently starts at a disadvantage. Strict accuracy in the ordering of dietetic treatment in infancy is no less essential than in drug treatment in adults. We *must* know the nature and amount of food we give the baby in 24 hours, the amount ingested at each feeding period, and the intervals between the periods. We must accordingly give our orders distinctly, definitely and in writing, in somewhat the following form:—

4 Table-spoons milk
2 Table-spoons boiled water
1 Tea-spoon cream
1 Tea-spoon milk sugar
} Scalded

in each bottle. Each feed to last 15 minutes. An interval of 2½ hours between each two bottles during the day.
7 bottles to be given during the day, and 2 at night.

Such a prescription naturally is merely temporary; with the growing capacity and growing needs of the infant additional nourishment is necessary. A new prescription is constantly necessary—it may be weekly, it may be more frequently. It certainly ought to be necessary weekly. Along with growth of the stomach and development of the digestive capacity generally, food which was suitable one week should certainly be inadequate the following; if such is not the case, either the baby is unhealthy or it was formerly getting too much nourishment. I fail to see any reason whatever for supplying nourishment to the infant in excess of its requirements, and the advantages of restricting the amount well within its digestive capacity are, I think, overwhelming. Its digestive capacity is wide, but it is unwise to approach too closely the maximum boundary line when equally satisfactory results can be obtained with the expenditure of a slighter degree of digestive energy, and consequently with a wider margin of safety.

In the case of healthy babies increase of the food must be

Digitized by Google

gradual; increase in strength of a feed and of the amount of a feed may, however, be contemporaneous.

On the occurrence of acute or chronic digestive disturbance, on the other hand, the diminution of the food constituents must be sudden and thorough. Digestive rest is the imperative indication, and starvation for a short period is well borne in infancy. In acute cases all food must be stopped for 4, 6, 8, &c., hours, and then nourishment commenced at the lowest limit of the gamut. In chronic cases the descent must be equally sudden but the degree more moderate, our aim being to administer a simple food of simple known constitution, which, in our opinion, will prove well within the disordered digestive capacity, and which at the same time will permit of the determination of the nature of the food stuff in connection with which difficulty arises.

In both acute and chronic cases increase of food both in amount and nature must be extremely gradual; increase in the amount and quality of a feed must *never* take place simultaneously; and new ingredients in the food, such as cream and sugar, must at first be added in the very smallest quantities possible.

(I do not include in the above title of acute cases slight digestive disorders of a healthy baby where, after thorough emptying of the alimentary canal, the general condition is not seriously, if at all, affected.)

In the consideration of the method of increase valuable information is supplied us by examination of the stools.

Below I append a rough scheme of the dietetic progression in such cases, in which, however, I have omitted all question of intervals, amounts and strengths, as these depend on many varying factors.

Dietetic Progression.

1. Saline transfusion (brandy).
2. Albumen water („).
3. „ „ and whey (brandy ?)—gradually increase the amount of whey till it is pure.
4. Whey and cream (brandy ?)—gradually increase the amount of cream.
5. Dilute fully citrated milk (or peptonised milk).
6. Gradually diminish degree of dilution and amount of citrate separately, and gradually and separately add cream and milk sugar.
7. Plain milk.

Digitized by Google

Closely connected with this subject is the question of the method of alteration of the infant's dietary.

It not infrequently happens that an infant is found to be living on an unsuitable diet, and marked alteration in the régime is essential. In such cases there are, I think, 4 main lines of treatment open for adoption.

Alteration of Diet.

1. Immediate stoppage of diet in use and substitution of suitable diet.
2. Alternation of feeds with diet in use and diet recommended.
3. Immediate stoppage of diet in use and commencement at lower rungs of nutritional ladder.
4. Gradual replacement in each feed of diet in use by diet recommended.

Of these 4 methods the first 2 are not likely to meet with success. Variation in the composition of infant feeds not infrequently is of considerable value—variation, that is, of the proportionate amount of the constituents in each feed. But the alternation of foods of altogether different nature is a much less valuable method of procedure, and certainly in cases where there has been the previous administration of unsuitable food, and digestive activity is consequently in a somewhat unstable condition, such a method is inadvisable. Methods 3 and 4 are, I think, more rational. When the infant is comparatively strong and well, an immediate diet descent, even so far as to albumen water, is well borne and suitable feeding gradually attained. In very many cases, however, this procedure is altogether unnecessary, and in very weakly infants is frequently most undesirable, and in such cases method 4 leads to most successful results.

On the subject of drugs I shall not linger. Where possible they are to be avoided and the desired result gained by alterations in the constitution of the food: by the addition of cream or olive oil, by the administration of a little sugar and water before the feed, and so forth.

In passing to the consideration of the diet in connection with various types of infants it is, I think, first of all desirable to consider the case of a healthy baby hand-fed from birth.

To a healthy baby hand-fed from birth I give scalded modified milk, commencing in the first week of life with 1 table-spoonful of

Digitized by Google

milk and 2 table-spoonfuls of boiled water for each feed, and gradually increase the amount and strength of each feed as age advances, as the digestive capacity increases, and as the weight curve and general clinical condition indicate. It is certainly wise, I think, to begin with this simple mixture of milk and water; small amounts of sugar and cream can in the great majority of cases very quickly be added and increased with due precaution; but as every case of artificial infant feeding must be considered in its initiation more or less of a dietetic experiment, it is essential that the first step be as simple as is compatible with satisfactory nutrition. For the same reason it is wise, when an infant previously on the breast is to be weaned, that such simplicity should again be observed. Where possible the process of weaning is a gradual one, the first substitute food for infants under 3 months of age or 12 pounds in weight being 1 part of milk with 2 parts of water, and for older and heavier infants equal parts of milk and water. In both cases the amount of each feed is, of course, approximately to be suited to the gastric capacity for the corresponding age, but the strength of the food can, in the majority of cases, be very rapidly increased. Where the process of weaning is of necessity abrupt the same regulations hold good, with this important proviso, namely, that the infant has in addition to maternal milk received no extraneous food.

Where feeding of any kind has been indulged in along with maternal nursing I think it is well to be even more on our guard in the process of weaning, except in those extremely rare cases in which we can be absolutely sure that the substitute feeding has in every particular been of a satisfactory nature.

As a rule, it is advisable to citrate the milk in these cases, either fully by the addition of 2 grains of sodium citrate to each ounce of milk, or partially with 1 grain to each ounce, according to the amount and nature of the artificial food or foods previously administered. By such treatment we prevent in the one case and diminish in the other the possibility of the occurrence of trouble due to unwonted curds in a probably unduly susceptible alimentary canal.

In most instances the proportionate amount of citrate in each feed can, as a rule, be quickly reduced in amount and ultimately omitted, either by gradually withdrawing it from the food, or by increasing the amount of milk, where such a procedure is advisable,

Digitized by Google

and keeping the amount of citrate stationary, and then gradually withdrawing the citrate. It is certainly not advisable to continue the administration of citrate longer than is necessary. The disadvantages of its prolonged employment are marked constipation, a very definite difficulty in stopping its administration without causing digestive disturbance, and in certain cases some evidence of diminished increase of growth, as demonstrated by the weight curve.

For babies previously hand-fed in an irregular and consequently unsatisfactory manner, but who nevertheless display no symptoms of marked digestive abnormality, citrated milk is again the most satisfactory initial step towards a well-ordered regimen.

Peptonised milk or milk and lime water, it may be contended, are equally satisfactory. As a rule they are not; in certain cases they are more so. Where thorough peptonisation of the milk is required previous to its administration to an infant of moderate general well-being, previously fed on some proprietary food or condensed milk, the very fact of the necessity of this procedure proves the necessity of a period of thorough digestive rest. It is important, I think, to recognise that in babies who do not suffer from any acute digestive trouble digestive rest may be advisable for one of two chief reasons.

In the first place, with a normal digestive capacity, for some extraneous reason (post-operation cases) it may be advisable while supplying suitable nourishment to diminish the amount of expenditure of digestive energy; or, again, the digestive capacity may be approximately normal in nature but diminished in amount (as, for example, in cases of acute illness not connected with the digestive system). In such cases peptonisation of the milk is temporarily advisable.

In the second place, the digestive powers through long-continued misuse may have become perverted, the powers in one direction having been taxed to the utmost, while in other directions no stimulus to development has been afforded.

Such are the cases we are at present considering, and, in the great majority of them, I think citrated milk is advisable.

In these cases it may be taken for granted that the capacity of digesting a reasonable amount of sugar is good, as the infant is in moderately good health, although having been fed almost certainly on a diet excessively rich in carbohydrate. Fat and

Digitized by Google

proteid have probably been deficient in the diet, but by commencing our dieting with diluted milk we begin with a small proportion of fat, which, in the first place, is probably no greater than was previously being administered; and, in the second place, even if it is, it is present in a quantity readily digestible by even a weakly infant. As regards the proteid, the powers of proteid digestion almost certainly require development. Pre-digestion of the food would be a hindrance to development, but by the citration of a mixture in its initial stages poor in proteid we encourage proteid digestive energy, while at the same time holding in check rennin activity, and consequently guarding against the occurrence of gastro-intestinal disturbance due to the mechanical action of unaccustomed massive curds on an excitable mucous membrane.

On the subject of the comparative value of citrated milk and peptonised milk in different varieties of cases it is, of course, only possible to speak in very general terms; in many cases one may be as satisfactory as the other.

Even where there is no marked diarrhœa or vomiting in cases where the method of feeding has been irrational, the baby is frequently found to be extremely ill-nourished and weakly. A slight amount of vomiting or regurgitation is almost certainly present; but it is not, as a rule, a serious symptom, and may even be beneficial. A tendency to diarrhœa may be present, or, on the other hand, constipation may be complained of.

Such babies are suffering from more or less severe degrees of malnutrition. The cause is occasionally insufficiency of food; as a rule it is the administration of improper food, usually at improper intervals. The degree of wasting is frequently so severe that the baby is literally a bag of skin and bones. Yet this is no true marasmus. Marasmus, as I take it, is a condition of congenital digestive incapacity, an inability to respond to the growing needs of the organism, by furnishing it from the alimentary canal with a suitable nutritive fluid. A digestive incapacity, not a perverted or disordered digestion; an incapacity originally altogether independent of the nature of the food supplied, and not a sequel to maladministration.

Rotch states that "primary infantile atrophy—marasmus—is extremely rare," and the condition is one which obviously lends itself to the exploiting of various methods of feeding, and consequently when such cases are seen at an advanced stage it may be impossible to say that the baby was not originally marasmic.

Digitized by Google

But a *certain positive* diagnosis is, I think, an extreme rarity.

In the cases of babies suffering from extreme malnutrition milk as milk should be avoided at least for some days.

It is impossible to be dogmatic further.

As a rule it is advisable, to begin with, to ensure the thorough removal from the alimentary canal of the remnants of previous food. According to the degree of weakness of the baby, stimulants may or may not be required. The two primary indications are to sustain the infant's strength, and to supply a simple food fitted for ready digestion and assimilation, which may serve as a step to a food of higher nutritive value.

It may be necessary to commence with albumen-water and brandy; it may be advisable to commence with whey and cream, or sherry-whey may seem the most suitable substance.

Our advance in the nutritive value of the food must be carefully guarded by observations of the clinical conditions, and more particularly by the nature of the stools; the advance may be slow or it may be rapid, but in every case it must be step by step. Where diarrhœa or vomiting, or both, have been for some time associated with the condition the rate of progression must be extremely slow, and new constituents must be added in minimal quantities. Thus cream or sugar must originally be added by the half tea-spoonful, however old the infant.

Where an acute attack of diarrhœa and vomiting is superimposed upon long-standing digestive disorder, after the initial period of digestive rest, lactated milk is temporarily of value in those cases in which the disorder is primarily associated with excessive bacterial action, as evidenced by clinical symptoms (toxæmia, temperature, &c.) and the stools. Where this method of dieting is employed in preference to other dietetic methods, it is wise, I think, to restrict the duration of its employment so far as possible. A habit of toleration of this milk is gradually acquired from which it is occasionally difficult to wean the infant, and, consequently, gradual alteration of the food according to the methods previously mentioned should be brought about as early as possible.

In cases of acute infective summer diarrhœa more especially is this form of milk valuable in both cases—where the infant previously was properly and where it was improperly fed—as in such cases it occasionally permits of stronger nourishment being early given to the infant than could otherwise be the case.

Digitized by Google

Of treatment in cases of organic disease I have but little to say; it is impossible to enter at length into each separate condition, and it is valueless to generalise.

In all acute infective conditions, in all conditions associated with high temperature, we have to bear in mind the particular effects associated with digestion, its diminished capacity, and the corresponding value in many cases of previous peptonisation of the milk.

In conclusion I would particularly note that in the foregoing remarks I have restricted myself rigidly to dietetic treatment. I have touched lightly or not at all upon the administration of drugs, enemata, stomach-washing, nasal-feeding, and so forth. In many instances, however, such treatment is intimately bound up with the dietetic treatment.

In the main the great *desiderata* in infant feeding are exactitude and method; method, rational or irrational, is a *sine qua non*. That man who, having devised or accepted some method as the one which appears to him most worthy of adoption, carefully regulates his practice according to this method is, I think, however unsatisfactory his results may be, worthy of all esteem.

The conduct of the man who lacks a method, who flits from one food to another—from peptonised milk to a proprietary food, from this to albumen-water, and so on—without definite rhyme or reason, is, on the other hand, absolutely inexcusable. His fitness for the care of infants is infinitesimal, and his position as mentor and advisor to the guardians of the children is fraught with the greatest danger to the patients themselves; his advice cannot but be pernicious to the interests of scientific medicine and the dissemination of rational knowledge on the subject among the laity, and consequently cannot but serve to bring discredit on the whole art and practice of infant feeding.

Digitized by Google

Births and Deaths in Eight of the Principal Towns of Scotland during November 1907.

DURING the month of November 1907 there were registered in the towns of Glasgow, Edinburgh, Dundee, Aberdeen, Paisley, Leith, Greenock and Perth, the births of 3655 living children, of whom 1822 were male and 1833 female. These births are 546 fewer than those registered in the previous month, and 122 fewer than those registered in November of last year. The births registered during the month are equivalent to an annual birth-rate of 24·6 per thousand of the estimated population of the eight towns, a rate which is 2·7 lower than that of the previous month, and 1·1 lower than the rate of the corresponding month of last year. The birth-rate of the month ranged from 28·5 in Greenock to 20·5 in Edinburgh. In Glasgow it was 26·4; in Dundee 25·0; in Paisley 25·0; in Aberdeen 23·0; in Leith 22·4; and in Perth 21·6.

Of the 3655 births, 246, or 6·7 per cent., were illegitimate, an illegitimate rate which is 0·3 less than that of October, and 0·7 less than that of November of last year. The illegitimate rate of the month ranged from 9·4 in Aberdeen to 1·9 in Leith. In Dundee it was 8·2; in Edinburgh 7·7; in Glasgow 6·6; in Perth 6·5; in Paisley 4·9; and in Greenock 3·0.

Deaths registered in these towns during the month numbered 2506, of which 1253 were of males and 1253 of females. These deaths are 247 more than those registered during October, but 80 fewer than those registered in November of last year. The equivalent annual death-rate is 16·8, a rate which is 2·1 higher than that of October, but 0·8 lower than that of November of last year. The death-rate of the month ranged from 22·4 in Greenock and 21·2 in Dundee to 11·6 in Aberdeen. In Perth it was 18·5; in Glasgow 18·4; in Leith 16·2; in Edinburgh 13·3; and in Paisley 12·9. The death-rates of Edinburgh and Paisley are lower than what they were in October, but in the remaining 6 towns they are higher.

Of the 2506 deaths registered in these towns during the month, 953, or 38·0 per cent., were of children of less than 5 years old; while 597, or 23·8 per cent., were of persons of over 60. The former are 207 more than in the previous month, and 43 more than in the corresponding month of last year; the latter are 32 more than in the previous month, but 78 fewer than in the corresponding month of last year.

Deaths of children of less than 1 year old numbered 548. They are 85 more than in October, but 55 fewer than in November of last year. The infantile mortality-rate of the month is 136 per thousand births, a rate which is 25 higher than that of October, but 13 lower

Digitized by Google

than that of November of last year. The infantile mortality-rate of the month ranged from 202 in Dundee to 91 in Edinburgh. In Glasgow it was 152; in Greenock 144; in Paisley 112; in Leith 102; in Perth 95; and in Aberdeen 93. In Edinburgh, Paisley, and Perth the infantile mortality-rate of the month was lower than in October, but in the remaining towns it was higher.

Deaths from the principal epidemic diseases numbered 322; they are 77 more than in October, and 110 more than in November of last year. The equivalent annual death-rate from these causes is 2·2 per thousand, a rate which is 0·6 higher than that of the previous month, and 0·8 higher than that of the corresponding month of last year. This rate ranged from 5·6 in Dundee to 0·6 in Edinburgh. In Greenock it was 3·4; in Perth 3·1; in Paisley 2·6; in Glasgow 2·3; in Leith 1·7; and in Aberdeen 0·7.

There were no deaths in these towns from small-pox. Deaths from measles numbered 147; they are 87 more than in October. Of them 80 were registered in Glasgow, and 50 in Dundee. Deaths from scarlet fever numbered 12; from diphtheria 28; from whooping-cough 63; from enteric fever 8; from diarrhœa and dysentery 42; and from cerebro-spinal meningitis 21. There were no deaths registered as due to typhus fever.

The number of deaths registered as due to cerebro-spinal meningitis continues to be a diminishing quantity; it is 8 less than that of the previous month and less than the number registered in any month since December of last year. Of the 21 cases registered, 14 were in Glasgow, 2 in Edinburgh, 2 in Leith, and 1 each in Dundee, Paisley, and Greenock.

Deaths during the month from influenza numbered 5; from puerperal septic conditions 5; from malignant disease 161, of which 96 were ascribed to carcinoma, 6 to sarcoma, and 59 to cancer not otherwise specified. Deaths from heart disease numbered 231; from apoplexies 141; from premature birth debility 66; and from alcoholism 8.

Deaths from pneumonia numbered 280, and constituted 11·2 per cent. of the total deaths of the month; they are 71 more than in October, and 19 more than in November of last year. Deaths from bronchitis numbered 200, and constituted 8·0 per cent. of the total deaths of the month; they are 72 more than in October, but 7 fewer than in November of last year.

Deaths from tuberculous diseases numbered 291; they constituted 11·6 per cent. of the total deaths of the month; they are 31 fewer than in October, but 8 more than in November of last year. Of these deaths 174 were ascribed to phthisis.

Digitized by Google

Deaths due to violence numbered 88. Of them 5 were suicidal, 3 being by cutting, and 2 by precipitation.

Of the persons whose deaths were registered in these towns during the month, 1 male and 5 females were aged 90 years and upwards. The oldest of them was a widow aged 96 years.

Obituary.

SIR PATRICK HERON WATSON, M.D., LL.D., F.R.C.S.Ed. & I., D.L.

The death of Sir Patrick Heron Watson has removed from our midst another of the few remaining great men who did so much to establish the fame of the Edinburgh Medical School.

To the younger generation of medical men, who only knew of him as a great consultant, his active career, as a teacher and operator, is only a tradition, and one has to go back to the early seventies to realise the position which he then occupied in the surgical world.

Born in Edinburgh in 1832, the third son of the late Rev. Charles Watson, D.D., Patrick Heron Watson received his early education at the Edinburgh Academy, and, after a distinguished student career, most of his time being passed in the wards of the Old Infirmary, he graduated in 1853 M.D. of the University of Edinburgh. Two years later he was elected a Fellow of the Royal College of Surgeons.

After a year's residency in the Infirmary, having as his chiefs the late Richard MacKenzie and Dr. A. Halliday Douglas, he volunteered for active service on the declaration of war against Russia, and was appointed a Staff Assistant-Surgeon in the Army Medical Service. But his hopes of experience in real warfare were not at once realised. His manipulative skill and teaching power led to his being retained at Woolwich to instruct other volunteers more fortunate than himself in the details of operative surgery. Finally, however, he attained his desires, and, as Assistant-Surgeon to the Royal Artillery, was dispatched to the Crimea. Typhoid fever, and subsequently dysentery, prevented him from taking such an active part in the campaign as he had anticipated, and he was ultimately invalided home in 1856. On his return to Edinburgh his abilities were at once recognised by his appointment as Assistant-Surgeon to the Royal Infirmary, among his colleagues being the late Sir John Struthers and Lord Lister.

Having qualified as a Lecturer on Surgery, he at once attained a marked success, more especially in his special lectures on Venereal Disease, which attracted not only crowds of students, but also numerous practitioners.

Digitized by Google

Photo by W. Crooke, Edinburgh.]

THE LATE SIR PATRICK HERON WATSON.

Digitized by Google

Digitized by Google

The late Professor Syme offered him his private assistantship, but, having already accepted a similar position with the late Professor Miller—whose eldest daughter he subsequently married—he was unable to accept it. The death of Professor Miller, to whose practice he succeeded, largely increased his private work, and from that time onwards, for many years, his time was more than fully occupied. But it was more especially his brilliancy as a surgeon that attracted notice. He was absolutely fearless, and, as an operator he was almost unrivalled. The traditions of the pre-anæsthetic days still survived, and the rapidity and dexterity with which he carried through the most complicated operations was something to remember; and the question as to whether Watson had taken 9½ seconds to amputate at the hip, while Spence had taken 10¼, used to be eagerly discussed among the students. It was not, however, these qualities alone that led to his fame as a surgeon, so much as the fact that, at the Royal Infirmary and the Chalmers Hospital, he devised and carried out many of those operations which only came into vogue years later, when the antiseptic system had revolutionised modern surgery. He was the first to excise the larynx; he removed the spleen; he popularised the excision of joints; and had the first successful ovariotomy in the Royal Infirmary.

A busy life prevented him from contributing as much as he would have wished to the literature of modern surgery. His greatest work was the practical re-writing and editing of the second edition of Miller's *System of Surgery*, at that time the standard work in Scotland; his brochure on Excision of the Knee Joint and its subsequent treatment, still remains a classic, and there are numerous other papers on Aneurism, the Excision of the Thyroid Gland, and the Conservative Surgery of the Foot, which may be found scattered throughout the journals of that time. His determination not to specialise did much to prevent him from attaining the highest official positions in surgery, while his compulsory retirement from the position of senior surgeon to the Royal Infirmary under the time limit led to his abandoning active teaching, but during his period of hospital service the influence which he exercised over his pupils was phenomenal; he was revered, loved, and imitated to an extent that can be hardly realised in these days.

Of honours he had his full share. He was one of the honorary surgeons in Scotland to the late Queen Victoria and to his present Majesty; a Chevalier of the order of Carlos III., an honour conferred upon him on the occasion of the marriage of Alphonso XII. of Spain; a Deputy Lieutenant of the county of the city of Edinburgh; an LL.D. of Edinburgh University; and an honorary fellow of the Royal

Digitized by Google

College of Surgeons of Ireland; while in 1903 he received the honour of knighthood.

The estimation in which he was held by his own college was shown by his election as their president in 1878, and also by his re-election in 1905, on the occasion of their Quater-Centenary Festival, and by his filling the position of their representative on the General Medical Council for twenty-four years. Beyond his strictly professional work, he found time for many public duties. He served not only on the University Commission, but also on the University Court, being one of its curators of patronage.

One of the very few forms of recreation in which he indulged was volunteering, and even it might be looked upon as a duty. At its very commencement he joined the Queen's Edinburgh Brigade as one of its surgeons, and gradually rose until, on his retirement under the age limit, he occupied the senior position as Brigade Surgeon Lieutenant-Colonel. As a lecturer, he was eloquent, clear, and impressive; as an hospital surgeon and clinical teacher, he was effective and popular; as a man, there was a stately dignity and courtly politeness about him that would allow of no liberties being taken, but to those who knew him he was the soul of generosity and kindness, while the full extent of his liberality to, and consideration of, his poorer patients will never be known.

It was only some eight years ago, after a severe attack of influenza, that his health began to break down. He had been a man who never spared himself, who was bound up in his professional work to the exclusion of all else. His retirement from public life has been gradual, and for the past six months he has rarely been able to leave the house. The end came swiftly, from angina pectoris and heart failure. At his best he was a great man in every sense of the word, and we cannot but feel that the death of Sir Patrick Heron Watson has left a void for many which can never be filled.

THOMAS ANNANDALE, M.D., D.C.L., F.R.C.S.Ed. & Eng.

On the 19th of December 1907, Thomas Annandale delivered his last clinical lecture, performed his last operation, and the repose which followed the day's work merged peacefully into his long last sleep.

Born at Newcastle on February 2, 1838, he was brought up amidst surgical surroundings, for his father, a friend of Liston, practised surgery in that town. Mr. Annandale would at times speak of his early experiences, and recall the impressions of the first surgical operation which he witnessed, at the age of 15.

Digitized by Google

THE LATE PROFESSOR ANNANDALE.

Digitized by Google

Digitized by Google

In 1856 he enrolled as a student of the University of Edinburgh, and graduated M.D. in 1860, becoming in the meantime, 1859, a member of the Royal College of Surgeons of England.

Professor Syme appointed him his House Surgeon in 1860, and a year later showed his appreciation of his ability by making him his assistant. This position he held till 1870.

In 1863 he acted as a demonstrator of anatomy under Professor Goodsir, while in the same year he began to lecture on systematic surgery in the extra-mural school. Soon afterwards he was appointed assistant surgeon to the Royal Infirmary of Edinburgh, and he became surgeon to the institution at the age of 33, when he began his lectures on clinical surgery. In 1877, when Lord Lister resigned, on his appointment to the chair in King's College, London, the chair of Clinical Surgery became vacant, and Mr. Annandale was selected to fill his place.

Among the numerous and valuable contributions which he made to surgical literature, may be mentioned his thesis "On the Injuries and Diseases of the Hip Joint," which gained for him a gold medal of the University of Edinburgh, the Jacksonian Prize Essay of the Royal College of Surgeons of England, "On the Malformations, Diseases and Injuries of the Fingers and Toes, and their Surgical Treatment," "On the Value of the Dependent Position of the Head in Operations on the Mouth and Throat," "On Some Injuries of the Elbow Joint," "On the Operative Treatment of Popliteal Aneurism."

He was a member of many learned societies at home and abroad, and had conferred on him the Honorary Fellowship of the Royal College of Surgeons of England, and the degree of D.C.L. by the University of Durham.

It is indeed difficult for those who know the Royal Infirmary to picture the surgical side without Mr. Annandale: the familiar group of students, staff-nurse and resident, with their active, alert chief passing from ward to ward, was an essential factor in the daily life of the institution. The moment he arrived at the infirmary, bustle—always well ordered—and activity reigned supreme, and the amount of work he accomplished in a short time was remarkable. It was a privilege to accompany him on his visit round the wards and to note the cheery, happy way he had with his patients, good humouredly chaffing one, consoling another, and always leaving behind him the kindly atmosphere of his sunny presence. There never was any difference in his attitude towards patients; rich and poor alike received at his hands the same kindly attention.

All his old students will remember how he used to speak of the educated touch, which he himself possessed in such perfection; and

Digitized by Google

the confident way he would allow his deft fingers to rapidly and gently travel over some painful lesion was a lesson in itself. No pain was caused, the patient was confident, and those around were impressed, when, with a quick little movement he would lift his hands from the part and with absolute confidence say, "H'm! deep-seated pus—must be opened at once," and while passing on to the next patient would rapidly give directions as to the arrangements for the operation.

He took a great pride in his excellent museum, and would, at times, demonstrate some of the rare and curious specimens with a commentary, short, apt, and most interesting, affording glimpses of the enormous experience he had gained from his own wide practice and from the ten years he was associated with his beloved chief, Professor Syme.

There was a wonderful neatness and rapidity in his operating, and when face to face with a great and unexpected emergency, he showed a coolness and a masterful resource which turned the occurrence into an everyday event.

Though a rapid, bold and fearless operator when dealing with such conditions as nasopharyngeal tumours and operations about the head and face, he was scrupulously careful and painstaking when operating on cases of hare-lip or cleft palate, for he always bore in mind how much the amenity of the patient's future life was dependent on his manipulations. As a lecturer he believed in the methods which Syme adopted. He showed many patients and pointed out the salient facts in each case he brought before the students, in preference to using one or two cases as a text for a learned dissertation.

Everyone who worked with him unconsciously absorbed some of his kindly nature, his scrupulous punctuality, his courteous bearing and honourable uprightness of character, certainly not the least important factors in the training of a student, and as they acquired these traits there grew up unconsciously a love for the "chief," great, and to many almost unknown, till death suddenly revealed it to them.

It was for the University, for the students, and for the Royal Infirmary that Mr. Annandale lived, and for them he spared neither time nor trouble.

Students of the Edinburgh School of Medicine owe him and always will owe him a debt of gratitude for the deep and untiring interest he evinced in their social life. It is not as chairman of the Union Extension Committee that he will be remembered, but by the building itself, and the beautiful field at Craiglockhart is a memorial of his work for the Athletic Club and the Field Committee.

He revered his old "chief"—Professor Syme—and it was only a few days before his death that he told those about him how a certain

Digitized by Google

corner on the Portobello road was ever memorable to him, for it was opposite it that that great surgeon asked him to be his assistant, a post which he occupied for ten years without, as he often said, a shade of difference between them. Many were the stories of Syme Mr. Annandale used to tell when he was in a reminiscent vein, and it is a touching incident that on his study desk was found lying an unfinished manuscript, an account of his "dear old chief." On Monday, December 23—a beautiful day—his remains were borne to their last resting place on the shoulders of those whom he loved, his residents and his students, accompanied by a great gathering of his colleagues, pupils, friends, and patients, who evinced during the solemn burial service their obvious attachment. When our perspective becomes mellowed by the lapse of years, the name of Annandale will be found associated with the great names of those who were foremost in the advancement of surgery.

He died in harness, as was always his wish, in the seventieth year of his life and the thirty-first of his professorship, a brave old English gentleman, one of the most kind, honourable, and lovable of men.

Meetings of Societies.

Edinburgh Medico-Chirurgical Society.

THE second ordinary meeting was held on December 4, 1907, Dr. James Ritchie, President, in the chair.

Dr. W. G. Aitchison Robertson gave a demonstration of the sterilisation of milk by Buddeisation. He referred to the fact that deposits of mud, hair, and excrement were commonly found in milk, and that he had observed clippings of dirty nails, fragments of tobacco, and other offensive substances in milk. Tubercle was not so common in Edinburgh cowsheds as in the rest of the country, but the tuberculin test was not applied to any of the city cows. Sterilisation of milk by boiling altered the milk, and although Dr. Robertson did not believe that it produced Barlow's disease in children by itself, yet partial sterilisation by heating the milk to 140° F. for 20 minutes was to be preferred. Either method was troublesome.

A minimal amount of harmless antiseptics added to milk had no deleterious action and would minimise the risks of using putrescent

Digitized by Google

milk. The use of nascent oxygen to purify and preserve milk could hardly be objected to.

Dr. Budde described his method of milk sterilisation. The milk should be brought to a central depôt immediately after milking. On arrival it should he heated to 122° F. and passed through a centrifugal cleaning machine. After this the milk should be placed in a vat with a water-jacket, whose temperature could be altered by steam. The milk was there mixed with peroxide of hydrogen.

Milk and every living cell contained a ferment called "catalase" which could decompose hydrogen peroxide, consequently $H_2 O_2$ could never be absorbed. As the amount of catalase in milk varied, it was preferable to add slight excess of $H_2 O_2$, and after the mixing and cooling, and just before bottling, a few drops of a solution of catalase solution should be added. The problem of supplying large towns with pure milk could only be solved by big companies.

Dr. Alexander Goodall and Miss Isabel Mitchell, B.Sc., communicated the paper on the Action of Formates, which appears on page 30.

Dr. G. A. Gibson said he had obtained very satisfactory clinical results from the therapeutic application of formic acid in circulatory disturbances and in chorea.

Dr. Claude Ker said that, clinically, toxic effects of formic acid did not exist. He was satisfied that it did good and improved muscular tone in diphtheria. It prevented cardiac failure and acted beneficially on paralysis.

Mr. J. W. Struthers read a paper on the value of Novocain as a local anæsthetic for subcutaneous use. In 85 cases he had found that it was unirritating, acted quickly and was of low toxicity. It was readily sterilised. For infiltration anæsthesia, he used a solution of 1 in 400 with adrenalin. For regional anæsthesia, 2 per cent. solutions were required. Novocain was the best local anæsthetic which had yet been introduced.

Mr. Wheeler (Dublin) agreed with Mr. Struthers that novocain was the best of the local anæsthetics. Where there was no special land-mark, he advocated making a scratch on the skin to indicate exactly where the anæsthetic had been introduced.

Dr. James read notes on cases of tuberculous anæmia. He stated that the condition had been first described by Trousseau, who thought it might be so far salutary. Many of the cases showed improvement in symptoms without improvement in the blood counts.

Dr. Gulland said that tuberculosis was often mistaken for chlorosis, or unnoticed in that condition. There were several types of anæmia in phthisis. There might be a true tubercular anæmia due to tubercular toxins. Chlorosis might be concurrent, due to bad hygiene, bad

Digitized by Google

food, &c. He agreed with Dr. James that in many cases fresh air and suitable feeding were more beneficial than the use of iron. The special condition which demanded iron was a low colour index.

Dr. Alexander Bruce read a paper on An Unusual Sequela of Herpes Zoster (? Posterior Poliomyelitis). A patient after an attack of herpes suffered from numbness passing up one extremity and down the other. There was weakness of the right lower limb with exaggerated deep reflexes, extensor plantar reflex, and loss of pain and thermal sense. Sweating was absent. A similar train of symptoms followed on the other side. There was probably a lesion of muscular origin at the base of the posterior cornu, first of one side and then of the other.

A clinical meeting was held in the Royal Infirmary on 18th December, Dr. Ritchie in the chair. Dr. Bruce showed cases as follows:—

(1) A woman suffering from myasthenia gravis. She had ptosis and diplopia in varying degrees according to the amount of fatigue, and difficulty in speech and in swallowing. There was general muscular weakness, but no atrophy. The myasthenic electrical reaction was present.

(2) A woman who had suffered from amyotrophic lateral sclerosis for two years. There was great atrophy with increased jerks. Speech was so much affected that only the vowel sounds could be produced.

(3) A woman suffering from aneurism of the internal carotid artery which had ruptured into the cavernous sinus. Some months previously she had noticed a loud report in her head, and ever since had suffered from noises in the head. A loud murmur could be heard over the head, its point of maximum intensity being over the wing of the sphenoid. There was protrusion of the left eye with chemosis and œdema.

(4) A case of neuritis of the median nerve. The nerve distribution was very definitely marked out by tactile anæsthesia combined with great hyperæsthesia to pain.

(5) A patient showing hemiatrophy of the tongue with nystagmus, and suffering occasionally from giddiness and tinnitus. This was either a rare form of syringomyelia or an encephalitis of the hypoglossal nucleus and floor of the pons and medulla.

(6) A young woman showing objective nervous symptoms after removal of both ovaries. Besides frequent emotional seizures, with an increased flow of tears on the right side, there was fulness of the right side of the face and thyroid gland, with some protrusion of the right eye and increased perspiration, especially on the right side.

Digitized by Google

(7) A man showing toxic spasmodic flexure of the second and third fingers, with stiffness of wrist, elbow and shoulder on the left side, associated with loss of pain and temperature sense. The case was an example of a very rare spasmodic form of syringomyelia.

Professor Chiene, C.B., described a case of congenital wry-neck in which he had obtained a good result by attacking the sterno-mastoid at its upper end. He turned down a flap of skin above the mastoid process, made a curved incision in the periosteum and pulled the muscle and periosteum down. The scar was completely covered by the hair.

He also showed a patient operated on for a loose body in the elbow-joint. A curved incision had been made above the joint, a flap was turned down and the joint was exposed by splitting the triceps. This method was suggested as a useful one in excising the elbow-joint. The absence of a scar at the point of flexion would permit early movement.

Professor Chiene also showed a device for measuring the lower limbs. From the point where a vertical and a horizontal piece of flexible steel crossed, two other pieces passed down the limbs. The angles they made with the horizontal piece were indicated by a metal disc fixed at the junction. Except for accurately noting the angles the same results could be obtained by a similar arrangement of cord. Professor Chiene then showed a shield to wear over the mouth and nose when operating. It consisted of a piece of gauze hung from a copper wire 20 inches long inserted into another piece of gauze encircling the head.

Mr. Caird showed eight patients successfully operated upon for gastric cancer either by pylorectomy and posterior gastro-enterostomy, or by Kocher's method. One case had been operated upon so long as 11 years before, and all had done well. The specimens were shown.

Mr. Caird also showed a patient after acute pancreatitis. He had opened the abdomen, removed several stones from the gall-bladder, drained it and drained the pouch of Douglas. He also showed a patient after operations for idiopathic dilatation of the colon with kinking leading to obstruction.

Dr. Philip showed three cases of phthisis in which no bacilli had been found, but which gave a positive local reaction to vaccination with 25 per cent. tuberculin.

A positive reaction was also shown in a case of abdominal tubercle. He also exhibited a series of cases showing Calmette's ophthalmic tuberculin reaction.

Mr. Alexis Thomson showed (1) a new enterotribe which could reduce intestine to a ribbon which could be cut off and invaginated.

Digitized by Google

(2) A patient, aged 53, operated upon for acute intussusception confined to the small intestine, and which being irreducible, the entire segment of gut involved, including the sheath, had to be resected. The preparation was shown at the meeting.

(3) A patient, aged 29, who had sustained a gunshot injury of the upper arm six months before he came under observation, with smashing of the humerus and tearing of the musculo-spiral nerve. An operation was performed for un-united fracture of the humerus, when it was found that the extent of destruction of the nerve rendered suture impossible. The distal end was therefore inserted into the median nerve above the elbow. He now proposed to unite the musculo-spiral at its upper end to the median nerve.

Mr. Stuart, for Mr. Hodsdon, showed a woman after operation for renal hydatids, and a severe case of Dupuytren's contraction practically cured, after treatment with fibrolysin.

Mr. Scott Carmichael showed (1) a boy suffering from Mongolian idiocy, who had been treated by multiple drainage for generalised streptococcal peritonitis, and who had been subsequently operated upon for cholangitis and empyema of the gall-bladder; (2) a girl, aged 3, after resection of cæcum and ascending colon, for tuberculous strictures two years before; (3) a boy with chronic atrophic arthritis of the wrist-joint.

Mr. Cathcart showed a woman cured of severe neuralgia by removal of the Gasserian ganglion by Cushney's method. Dr. Norman Walker showed (1) a woman suffering from pemphigus foliaceus. Marked improvement had followed the use of vaccines prepared from organisms isolated from the bullæ. (2) A case of tuberculosis of the skin which had improved after a combined treatment, consisting of the use of small doses of tuberculin at intervals of 4 weeks, the application of X-rays, and the constant inunction of oleate of mercury. (3) A man, aged 22, showing fine scarring and a patchy eruption over the forearms. Although possibly lupus erythematosus, the condition was more probably a very chronic superficial syphilide. Potassium iodide had acted beneficially.

Edinburgh Obstetrical Society.

THE second meeting of the sixty-ninth session was held on Wednesday, 11th December, at 8 P.M. The President, Professor Stephenson, in the chair.

The Society took up consideration of the proposed alteration of

Digitized by Google

Law IV., notice of which was given at last meeting by Dr. Haultain and Dr. Barbour on behalf of the Council. After considerable discussion it was agreed, by the requisite majority, to change the hour of meeting from 8 P.M. to 8.30 P.M.

After the election of 7 new fellows and other private business the following specimens were exhibited:—By Dr. J. W. Ballantyne (1) a hydatid mole—the specimen showed an unusually large amount of dense blood-clot. (2) An abortion-sac, probably about sixth or seventh week, in which no embryo could be found. (3) A portrait of Paul Chamberlin. From the date of the portrait and the age of the subject it is more probably "Peter Chamberlin," as suggested in Aveling's account of the Chamberlin Family.

Dr. Haultain showed (1) multiple large sub-peritoneal fibroids growing from a uterus only slightly enlarged. The fibroids had produced almost complete torsion of the uterus. (2) A uterus with a soft fibroid growing from the supra-vaginal portion of the cervix—in this case the uterine cavity was greatly enlarged. Dr. Fordyce showed a uterus with large sub-peritoneal fibroids, the uterus had undergone complete torsion, intestinal obstruction supervened, necessitating an emergency operation. Dr. Haig Ferguson showed (1) 2 specimens of fundal carcinoma removed by abdominal pan-hysterectomy—in one case the patient was æt. 60. (2) A dermoid tumour which had, by torsion, become detached from its pedicle. (3) Large double pyosalpinx—one tube was so large that it formed an abdominal tumour. On examination the pus was found to be sterile. From the history of the case the condition was evidently of tubercular origin. (4) Uterus removed by vaginal hysterectomy for carcinoma of the cervix in an early stage. (5) A uterus removed by vaginal hysterectomy, showing sarcomatous infiltration of a submucous fibroid. The patient, 26 years of age, had previously had three fibroid polypi removed. (6) Two tubal gestations. (7) Parovarian cyst, showing torsion of the pedicle. (8) Uterine fibroid removed by abdominal hysterectomy, which had been associated with pyosalpinx on one side and hydrosalpinx on the other. After some discussion had taken place on the specimens exhibited, Dr. A. Dingwall Fordyce read to the Society the paper which appears on page 47.

The President, having thanked Dr. Fordyce for his paper, the discussion was taken part in by Dr. Carmichael, Dr. Ballantyne, Dr. Inglis, Dr. Stewart Fowler, Dr. James Ritchie and Dr. Pearson. Dr. Stewart Fowler particularly emphasised the fact that it was an advantage to lengthen the intervals between feeds as soon as possible, as with longer intervals there was a greater chance of there being free hydrochloric acid in the stomach.

Digitized by Google

Glasgow Northern Medical Society.

AT the monthly meeting held on 3rd December, Dr. Johnston of Ruchill Fever Hospital gave a lecture on Epidemic Cerebro-Spinal Meningitis, based on his experience during the recent epidemic.

Over a certain period 294 cases were admitted certified as suffering from cerebro-spinal fever, and 6 others were on admission found to be suffering from the disease. Of the 294 cases, 81 were not cerebro-spinal fever—25 were probably cerebro-spinal fever, but the diagnosis was doubtful on account of the non-recovery of the specific organism, and 194 were undoubted cases. The majority of the cases were under 5 years of age. The mortality rate over all was 78·3 per cent. Of 5 patients over 40 years of age all died. Between the ages of 25-30 the death-rate was lowest. Under 5 the rate was 81·1 per cent.

Dr. Johnston pointed out the value of lumbar puncture and examination of the fluid in deciding between cerebro-spinal fever and tubercular meningitis.

As regards infectivity we are still much in the dark, but Dr. Johnston does not think the disease very infective.

In treatment most reliance was placed on good nursing. Five different kinds of serum had been employed, but with none of them were satisfactory results obtained.

Dr. Johnston showed numerous charts and photographs illustrating the course of the disease.

Forfarshire Medical Association.

AN ordinary meeting of the Society was held in the School of Medicine, Dundee, on the evening of Thursday, 5th December, Dr. Rorie in the chair.

Dr. Guild showed two patients after operation for abscess of the brain, following middle ear disease, and gave a short description of the cases.

The first was that of a boy aged 10 years, who from infancy had suffered from an intermittent discharge from the right ear. Three weeks previous to the onset of the acute symptoms he got a blow on the head, and his mother attributed to this the headache which followed, accompanied by vomiting and shiverings. He was sent to the infirmary, where on admission he was found to exhibit all the symptoms associated with abscess of the brain, along with a fœtid discharge from the ear. The radical mastoid operation was performed, all the carious bone cleared away, the sinus exposed, and further examination led to the

Digitized by Google

discovery of an abscess in the cerebellum half an inch below the surface. This was opened, a gauze drain inserted, the cavity plugged. The treatment was followed by a complete abatement of the acute symptoms, and he made an uninterrupted recovery. The second case was that of a girl aged 16, in whom the symptoms of cerebral abscess were masked by acute suppuration in the mastoid, and the possibility of meningitis or sinus thrombosis. She was suddenly attacked with headache and severe pain behind the eyes, pain in limbs, high temperature; the symptoms pointed to an attack of influenza. Shortly afterwards tenderness and œdema developed over the left mastoid, and discharge came from the ear. The mastoid was opened up and cleared of pus and debris, and an abscess discovered in the cerebrum just above the mastoid. This was opened and drained, and she also made a good recovery.

Mr. Greig showed a specimen of teratoma of the testis removed from a child 13 months of age. The condition was discovered some months after birth, and consisted of a solid oval swelling of the testicle, the size of a small date, bearing no resemblance either to a tubercular state or to a hydrocele. Microscopic examination revealed the presence of muscle, gland, nerve, cartilage, &c., &c., the tissue of practically every organ in the body being represented in the tumour.

Mr. Greig also read a paper on intermittent claudication, and gave notes of a case of this interesting and rare disease, which he had met with in a man 72 years of age. He was a healthy and active man for his years, and a great walker, but for twelve years had been subject to recurrent attacks of biliousness, coming on more especially after any undue exercise. In December 1905 a severe bilious attack with diarrhœa was followed by pain and swelling in the right leg and thigh, accompanied by pain without swelling in the left leg, and in the region of the left hip, which pain remained several months and recurred after walking. As at no time was there any symptom indicative of arterial obstruction, the condition was evidently produced by thrombosis in the right common iliac vein, from which it had apparently spread to the inferior cava, obstructing the venous return from the left ilio-psoas muscle. Thereafter intermittent claudication occurred invariably after any prolonged use of the ilio-psoas muscle accompanied during the lameness with pain. He referred to the comparatively little literature on the subject, and pointed out how in veterinary pathology the condition was much better known than in human, and how in both conditions was mostly in association with arterial changes, and not limited to the veins, as in his case.

Dr. R. C. Buist read a paper on the use of hyoscine and morphia in the ordinary management of labour. He referred first to the use

Digitized by Google

of chloroform in labour, and spoke of the difficulty in always getting just that degree of anæsthesia which was necessary to subdue the pain without causing delay in the progress of the labour, if not constantly watched, which in so many cases involved a great expenditure of time on the part of the obstetrician. By the hypodermic injection of hyoscine and morphia this ideal obstetric anæsthesia could be produced. For this purpose he used $\frac{1}{100}$ gr. of hyoscine and $\frac{1}{6}$ gr. of morphia; this he thought was the best proportion, but it could be varied in amount according to the requirements of individual patients, it being necessary in those who bore the pains badly to increase the amount of morphia. The effect was generally produced in about 15 minutes and fully developed in an hour. After the injection the patient becomes drowsy, lying quiet during the intervals of pains, waking up when they come on, but experiencing no actual pain, frequently falling into sound sleep during which the contractions go on, and labour proceeds to a natural termination, the patient remaining in a state of semi-consciousness the while. His observations of its use had extended over several cases in private, and a series of 37 occurring in the Maternity Department of the Royal Infirmary, where the injections were used irrespective of any urgent necessity for anæsthetics. He mentioned in detail several cases which illustrated the great usefulness of the method, and in none of the series were there any untoward complications which might have been caused by the injections. The chief indications of its use were when an end had come to the patient's endurance, or when there was the prospect of a long labour, as with a rigid cervix, or faulty position. As far as he could judge, the method was a safe one both to mother and child; all the patients with two exceptions being pleased with the relief from suffering obtained, and it also had the advantage of being a less fatiguing method for the obstetrician than the use of a general anæsthetic. He expressed himself as pleased with the results, and intended to continue its use in suitable cases.

Dr. Don read notes on three cases of stricture of the œsophagus, in which he spoke of the value he found in X-rays for the diagnosis of the exact site of the stricture. He discussed the treatment of traumatic stricture by dilatation with bougies, pointing out the danger which surrounded the method when applied to malignant conditions. The first case was that of traumatic stricture at the cricoid narrowing, which was successfully treated by dilatation under chloroform. The second case was of syphilitic origin, and yielded to treatment by dilatation. The third case was that of malignant stricture, in which gastrostomy was performed, as the only treatment which would be likely to give relief.

Digitized by Google

Aberdeen Medico-Chirurgical Society.

A MEETING of this Society was held on 5th December, Dr. George Williamson, President, being in the chair.

Professor Matthew Hay made a few explanatory remarks with regard to the new Registration of Births Act. From a public health point of view he was strongly in favour of its local adoption. It was likely to prove of valuable assistance in dealing with the question of the reduction of infantile mortality. He stated that even the small amount of information they had been able to obtain of recent years from health visitors, registrars, &c., had proved of enormous value in dealing with this important problem.

Mr. J. Scott Riddell read a paper upon "A Case of Ureterotrigonal Anastomosis for Extroversio Vesicæ." The patient was a young girl, 6 years of age, who presented the typical appearances of ectopia vesicæ. Mr. Riddell adopted Maydl's plan of operation, in which the trigone of the bladder and the ureteral attachments intact are implanted into the sigmoid flexure. In this manner the uretereal sphincters are retained and septic infection of the kidneys is prevented. The result of the operation was extremely good, and the patient is now able to retain urine in the rectum for from 3 to 4 hours.

Dr. Henry Peterkin read a paper on the treatment of nasal polypi. Except in the case of very young children and nervous patients he preferred to use local, rather than general, anæsthesia. Satisfactory local anæsthesia was best obtained by preliminary careful swabbing with 10 per cent. cocaine, followed by 1 in 1000 adrenalin hydrochloride, and subsequently by swabbing with 20 per cent. cocaine.

For the removal of the polypi he believed in the use of the cold snare, provided the snare was made to cut through the pedicle. The jerking method of removal by the snare, so frequently mentioned in the text-books, was liable to cause pain, and very frequently failed in its object. From a consideration of the pathology of the condition he condemned the use of the cautery, and recommended the punch forceps and curette for the removal of all diseased bone, &c. In conclusion Dr. Peterkin emphasised the importance of recognising any complicating suppuration in the accessory sinuses, a condition which markedly interferes with the simple treatment of polypi. During the discussion which followed the reading of the paper several members instanced cases in which this latter complication was found present.

Digitized by Google

Recent Literature.

CRITICAL SUMMARIES AND ABSTRACTS.

THE INSTITUTES OF MEDICINE.

By DAVID FRASER HARRIS, M.D., B.Sc.,
Lecturer on Physiology and Normal Histology in the University of St. Andrews.

ONE of the noteworthy events in the physiological world during the last six months was the meeting of the Seventh International Congress of Physiologists at Heidelberg, under the presidency of Professor Kossel of the University of Heidelberg.

It was interesting meeting in the very rooms occupied by Helmholtz, and being able to handle the very instruments and models designed and made with his own hands when Professor of Physiology at Heidelberg.

One of the most striking demonstrations made before the Congress was a kinematographic reproduction of the progress of events in gastro-intestinal peristalsis in the cat. Carvallo of Paris had, by Cannon's method of administering food mixed with sub-nitrate of bismuth, obtained a whole series of radiograms of the processes from ingestion of the food until its arrival in the great intestine. Of course the transit of the material as viewed in the kinematograph was accelerated to such an extent that it was displayed in about three or four minutes. Amongst other demonstrations was one by Professor Sherrington on the curious power of strychnine to convert central inhibition into stimulation. In a preparation in the decerebrate cat, the only muscle left functionally intact was the vasto-crureus, an extensor of the knee, all others having had their motor nerves cut or their attachments severed. If the central end of the internal saphenous nerve is stimulated, reflex relaxation of the crureus is always produced, but after the injection of strychnine similar nerve-stimulation now causes reflex contraction of the muscle.

The Congress adopted a joint-report from the Physiological and Chemical Societies on the nomenclature of the proteids. The chief novelties are "protein" for "proteid," sclero-protein for albuminoid, meta-proteins for derivatives such as acid and alkali albumin, and poly-peptides for two or more amino-acids in synthesis.

Digitized by Google

The subject of *autolysis* is receiving increasing attention. The aseptically excised liver, for instance, is known to liquefy into lactic and butyric acids, glycocoll, leucin, tyrosin, tryptophane, ammonia, and the hexones, *i.e.*, to exhibit a break-down as complete as in tryptic digestion itself.

Efforts to isolate from the tissues an enzyme capable of bringing about these changes in tissues have been successful; it has been found possible to precipitate it by ammonium sulphate. Added to sterile moist tissue it induces a break-down similar to that of "auto-digestion," as autolysis was at first called.

An obvious criticism is that these katabolic products are the result of the activity of the traces of trypsin in the tissues, but it has been conclusively shown that typical autolysis can go on in organs from an animal whose pancreas has been extirpated. Light is thrown on the physiology of starvation by the recognition of this process of autolysis.

In starvation the "nobler tissues" of nervous system and heart live upon the "less noble"—the fat and muscle. Tissue-lipase is believed to resolve the neutral fats stored in the body into fatty acids and glycerine for transport of these to the tissues requiring energy. After the fat is in this way used up, the muscle itself is autolysed, certain of its disintegration-products being carried off to contribute to the upbuilding and energy-requirements of the heart and central nervous system.

It comes then to this, that the various tissues possess an intracellular enzyme capable, under certain conditions, of bringing about protein-hydrolysis. What, it may be asked, normally keeps these autolytic ferments in check? At the present moment we cannot answer that question more fully than to say that probably there are present in cells certain substances belonging to the class of *anti-catalysts* or *anti-enzymes*, which restrain the activity of the ferment which induces autolysis. Such substances are also known as "negative catalysts." As a matter of fact, Hedin has already found in ox-serum a substance which acts in this manner towards the autolytic enzyme of the splenic tissue.

An interesting question arises as to how we are to regard autolysis from the theoretical point of view. Katabolic it certainly is: is it a vital process or a post-mortem one?

It is obvious that an organ excised from a living animal is itself living, and will continue to live for a certain length of time

Digitized by Google

that varies for the different organs of any one animal, and, for any given organ, varies with the species of animal in question.

The isolated or surviving (überlebendig) organ will continue to live indefinitely if supplied by its blood-vessels with suitable nourishment perfused through them. Such an organ is clearly in conditions very closely resembling those normal; for it at its optimum temperature it is being fed (without, of course, any control from the nervous system); it continues to exhibit anabolism and katabolism.

An excised living organ which receives no nourishment, but is merely allowed to remain in a sterile atmosphere, can clearly only katabolise. This is autolysis *in vitro*. Autolysis may therefore be described as katabolism without concomitant anabolism proceeding aseptically to its extreme chemical limits, whereby the disintegration of tissue proceeds unhindered by the otherwise normally present anti-catalyst of living tissues: it is life expressed by one phase only—katabolism proceeding *post-mortem animalis*.

While, therefore, in inanition we have, in the case of the nobler tissues, both anabolism and katabolism proceeding normally—although the food material is abnormally derived—in the less noble tissues we have only katabolism exhibited, since, for them, there is no incoming food to be anabolised at all. Confirmatory of the view that autolysis is vital (katabolic), we have observations in which it was noticed that in those cases where chemical antiseptics were used to prevent putrefaction the autolysis was very distinctly inhibited; in other words, the chemical antiseptics, in that they destroy life in the humble fungi, also tend to depress it in the far higher animal cells.

Lastly, as regards autolysis, it has been demonstrated that just as animals have been kept in nitrogenous equilibrium on the products of tryptic digestion, so they have also on those of tissue-autolysis.

Protein Absorption.—Curious as it may appear to confess it in the seventh year of the twentieth century, it is a fact that physiologists are still in uncertainty as to the precise form, chemically speaking, in which we absorb our nitrogenous foods. What was taught till quite recently, what is to be found in all except the most recently altered text-books, is that albumoses and peptones are absorbed by the intestinal capillaries (not the lymphatics), and are during this process dehdyrated by some tissue of the intestinal

Digitized by Google

mucosa back to the state of "native proteid," into the two varieties in blood-plasma — serum-albumin and serum-globulin. It has been long known that neither albumoses nor peptones ever, in health, reach the circulating blood; if they *do* gain entrance into the blood they act as depressant poisons, and are ultimately excreted by the kidneys (peptonuria).

The classical view, then, regarded intestinal hydrolysis as normally ending with peptones, which being absorbed became blood- or circulating-proteids, and spoke of all hydrolysis to simpler bodies (amido-acids, &c.), as the production of "waste" material, and doubted whether *in vivo* it ever went so far as we certainly find it going *in vitro*. But the "hemi-peptone" of Kühne we do not now believe to be as such absorbed at all, and the "anti-peptone" we do not hold to be even a peptone at all. In the first place, it is very doubtful whether absorbed protein really recruits blood-proteins.

For, besides that blood was formed in the embryo anterior to all food-absorption; there is in starvation practically no diminution in the quantity of the circulating proteins. This is corroborated by the following ingenious experiment of Aberhalden and Samuely (*Zeit. f. Physiol. Chem.* 46, 1905, 193). A horse was bled to an extreme degree, and then fed on gliadin—a protein from wheat. This substance could be accurately distinguished by certain tests from horse blood-protein. After its blood had been to a very large extent regenerated, the serum-proteins were found to be exactly similar to those of normal horse-blood, and not at all similar to gliadin. If it be maintained that the serum-proteins must have been ultimately derived from those of the food, then it is chemically certain that the protein-molecules of the food must have been broken down to an extreme degree, and certain non-protein residues synthetised to serum-proteins.

Normally, it is therefore improbable that food, blood, tissues are the links in the chain of protein absorption.

Recent work on digestion has demonstrated that the break-down to amido-acids in tryptic digestion is *in vivo* much more perfect than was previously supposed, and that in peptic digestion it is by no means inconsiderable.

Any peptone that has escaped this digestive disintegration is attacked by erepsin in the intestinal mucosa, and thereby reduced to the non-protein state.

Digitized by Google

That protein is absorbed in a *non*-protein condition is interestingly corroborated by the observation that animals can be kept in nitrogenous equilibrium by being fed on the products of *artificial* protein-hydrolysis.

The present-day teaching as regards absorption then is, that a number of these amido-acids are denitrified, *i.e.*, have their amidogen split off as ammonia, which being sent to the liver is therein synthetised to urea for urinary excretion, while their fatty acid residues are sent *via* the blood-stream to the tissues to supply them with dynamogenic material for their heat and work requirements.

Certain tissues, other than intestinal, have been found to be possessed of a denitrifying enzyme, so that it seems to be of some importance that amidogen-nitrogen should not gain an entrance into the biogens of protoplasm.

This denitrification makes it clear that the metabolism connected with energy-output is a non-nitrogenous one, and explains how so much protein can be supplanted by fat and carbohydrate in a diet, provided the mixture contains the necessary number of calories.

But if all those things are so, it is clear that much of the urea in the urine is of food-origin as opposed to tissue-origin, *i.e.*, that its nitrogen has never been tissue-nitrogen at all.

Hence those calculations by the older physiologists, which were based on the assumption that *all urea* represented broken-down tissue, are necessarily incorrect.

Urinary kreatinin and not urea is *the* katabolite which has arisen from "effete" tissue-nitrogen.

The fact of the output of urea in inanition does not necessarily clash with the above contention, because certain tissues are living at the expense of others, the less noble, which are autolysed into amido-acids, for the nourishment of the more noble. But these amido-acids will be denitrified before incorporation just as though they had been of external food-derivation.

The acceptance of this teaching concerning the existence of a denitrifying intestinal enzyme gives meaning to a fact long known to physiologists in connection with the nitrogenous metabolism of the starving animal. If the total nitrogen output of a starving animal be estimated for the 24 hours (x grms.), and if the animal be given a weight of protein containing exactly this amount of

Digitized by Google

nitrogen, then it is found that per 24 hours it is excreting *more* than x grms. of nitrogen, *i.e.*, nitrogenous equilibrium is not possible although it has received as much nitrogen as it was excreting. Owing to the activity of the denitrifying enzyme, the tissues never receive x grms. of nitrogen, even although they now need them all. The tissues still, therefore, unavoidably have to supply nitrogenous substances in their break-down for heat purposes, so that although x grms. enter the body, $(x+y)$ grms. of nitrogen leave it.

But not all the intestinal substances are denitrified. The following are not:—

Histidin or imidazole-α-amino-propionic-acid;

Tryptophane or indole-α-amino-propionic acid; and

Proline or α-pyrrholidin-carboxylic acid.

It is surmised that these, or derivatives of them, reach the living cells with the precious nitrogen for assimilation; it is evidently not amidogen-nitrogen which can be so applied.

That histidin should be one of the substances in this category is of course significant, seeing that it is *the* constituent of nuclein, and, therefore, of the nucleus, the body in which all cell-metabolism begins.

The question may be raised as to whether the presence of substances not protein absorbed during digestion can be detected in the blood-stream. Obviously this is a matter of immense difficulty. It has been calculated that if a man were to ingest 100 grms. protein in 24 hours, and absorption to go on for 16 hours, then of leucin, which constitutes 20 per cent. of protein, we should only expect to find as a maximum 2 milligrammes per litre of blood. Doctors Leathes and Cathcart, however, have faced the problem, and, examining the blood of the dog during absorption, have demonstrated a small but distinct increase of substances not precipitable by tannic acid, and therefore not protein.

In July 1907 were published (Peterson and Jung, *Brain*, July 1907) some curious results entitled "Psycho-physical Investigations with the Galvanometer in Normal and Insane Individuals." The observations were made in the laboratory of the clinic for Psychiatry in Zürich.

The apparatus used was the mirror galvanometer of Deprez and D'Arsonval; the electrodes were large copper plates, on which the

Digitized by Google

palms of the hands or the soles of the feet could rest. A current across a rheostat was sent through this heterogeneous circuit. Certain physical factors affecting the amount of current traversing the galvanometer from moment to moment were noted, viz.:— (1) Degree of firmness of application of the hands on the copper plates, which is equivalent to alterations of area of skin in contact; (2) temperature of the hands; (3) moisture of the hands. None of these factors is itself productive of the characteristic phenomena of constantly fluctuating intensity of current in the galvanometer which is induced by various emotional or other psychic states. All sorts of sensory and intellectual conditions influence the current. The authors have accurately measured the mirror-deflection due to such things as imagined prick of a needle, the fall of a heavy weight, the asking of all sorts of questions, the multiplying of various factors together. Both mentally normal and mentally abnormal individuals were experimented on.

According to the authors the galvanometer is a measurer of the amount of emotional tone, and a new instrument of precision in psychological research. The explanation of these and similar results is by no means easy. Tarchanoff (Pflüger's *Archiv. f. Phys.*, 1890) regarded the phenomena as due to "secretory currents in the sweat-glands." Stricker (*Wien. klin. Rundschau*, 30 and 31, 1907) thinks that activity of the capillary vessels will account for the variations in electro-motive forces observed. He opposes the idea of secretory currents induced reflexly from the skin, because, for one thing, he has obtained similar phenomena in anæsthetic and analgesic skin-areas.

That the blood-vessels are not the sole factor is demonstrated by Veraguth of Zürich (*Arch. de Psychologie*, August 1906), who obtained similar currents in a limb rendered bloodless by the Esmarch bandage. That the glands are not solely responsible for the phenomena is rendered probable by the observation that currents can be obtained from a skin-area made perspiration-free by the application of formalin. Activity of muscles is the only factor possible left to account for the variations of E. M. F. obtained; sub-conscious stimulation of the muscles, as organs of sub-conscious expression of psychical states, seems the only possible explanation remaining to us.

Mr. H. M. Davies, F.R.C.S., has an exhaustive research (*Brain*, July 1907, p. 219) on the functions of the trigeminal nerve. On

Digitized by Google

the vexed question of the paths of ascent of the taste-fibres he writes: "Including the evidence of morphological, developmental and histological observations, I am inclined to the opinion that the gustatory impulses reaching the geniculate ganglion by the lingual and chorda tympani, pass thence to the brain in the pars intermedia."

Dr. Lewis C. Bruce, of Murthly, has published a volume entitled *Studies in Clinical Psychiatry*, the main thesis of which is that certain forms of insanity are due to bacterial invasion. Considering the great practical difficulties in the way of fully proving such a contention, Dr. Bruce has made a spirited attempt to gain a deeper insight into the etiology of certain forms of cerebral disease.

The chemical pathology of gout has been studied by B. Bloch (*Zeitsch. Physiol. Chem.* 1907, 51, 472-477). He shows that, as we already know, there is an exogenous as well as an endogenous production of uric acid in the organism, but that in gout the acid of exogenous origin is retained more thoroughly and excreted more slowly than in health. The excess of uric acid in the blood in gout is of endogenous origin. This author confirms a widely held view that there is a diminution of those enzymic processes which lead to the oxidation of oxypurines to uric acid.

Messrs. W. J. Little and C. E. Harris (*Biol. Chem. Journ.*, 1907, ii. 230-239) have studied the metabolism in a case of a healthy "vegetarian" on a diet with reduced N.-intake. The subject ingested only 50 grms. of protein per 24 hours in vegetables and milk; there was no loss of weight, and his "gouty deposits" disappeared. The arthritic symptoms temporarily reappeared during his residence in a locality where the water was distinctly "hard."

A rather interesting piece of work has been done on the influence of quinine sulphate on the blood (T. N. Wilson, *Amer. Journ. Physiol.* 1907, pp. 445-460). It is found that the drug, in very dilute solutions, raises the opsonic index of normal individuals, whereas in strong solutions it depresses phagocytosis.

Leucocytosis has been shown by A. de Poehl (*Compt. rend.* 1907, 145, pp. 487-489) to be increased by alkalinity of the blood, and by the presence of spermine ($C_5 H_{14} N_2$) in it. Resistance to infection is lowered when lactic acid neutralises the alkalinity.

Pavlov's results in dogs as to sham-feeding have been recently

Digitized by Google

confirmed in the case of man by H. Kaznelson (*Pflüger's Archiv.*, 1907, 118, 327-352). Both olfactory and gustatory stimuli cause, after a latent period of five minutes, the psycho-motor reflex flow of gastric juice. The juice has been shown to possess lipase. As regards the nervous system, one or two interesting points may be recorded. Chloroform has been shown to lower the excitability of the respiratory centre towards CO_2 as a stimulus (B. Collingwood and H. L. F. Buswell, *Journ. Phys.*, 35). The original statement of Halliburton and Mott as regards the presence of choline in the blood and cerebro-spinal fluids in cases of nerve-degenerations is confirmed (O. Rosenheim, *Journ. Phys.*, 35, 465-472).

The panting and distress of athletes after excessive exertion is shown to be due to some unknown toxic products produced by the excessive muscular work, *i.e.*, it is not due to CO_2 entirely (L. Hill and M. Flack, *Journ. Phys.*, 36).

The physiology of kreatinin is enlarged by the observations of Lambert and Wolff (*Proc. Americ. Soc. Biol. Chem.*, 1907, 19-20). They show that in pneumonia both the kreatinin and the neutral sulphur excreted are increased. Since kreatinin can be detected in the urine of the newly-born infant, the notion is strengthened that it is an index of break-down of tissue as distinguished from that of food (Amberg and Morrill, *Journ. Biol. Chem.*, 1907, 3, 311-320).

An interesting fact regarding the antagonism between muscarine and atropine has been brought to light by W. Straub (*Pflüger's Archiv.*, 1907, 19, 127-151).

Muscarine brings the heart of Aplysia to a standstill although this organ has no inhibitory mechanism; but atropine antagonises muscarine only in those hearts which have such a mechanism. In other words, the mutual antagonism of these drugs is not a mere physico-chemical neutralisation, but a physiological opposition only demonstrable through and upon the appropriate peripheral nerve-cell apparatus.

Bile, it appears, stimulates peristalsis only in the great intestine, not in the small (*Schupbach. Zeitr. Physiol.*, 1907, 21, 365-367).

When the liver is excluded from the circulation by the establishment of an Eck's fistula, hepatic glycogenesis becomes negligible; but F. de Filippi has shown (*Zeitsch. Biol.*, 1907, 50, 38-74) that glycogen on an appropriate diet is stored up in muscles as before. That is to say, muscular glycogenesis can proceed independently of hepatic.

Digitized by Google

PUBLIC HEALTH.

By Wm. ROBERTSON, M.D., D.P.H.,
Medical Officer of Health for Leith.

The Public Health of 1907.

To summarise the outstanding features of the work done in the domain of Public Health would be simple. But more than a mere recital of happenings is necessary, since not a few of the "sanitary" features of 1907 are of immediate interest to the practitioner of medicine.

Take, for example, the recommendation by the Local Government of Scotland that tuberculosis of the lungs might with advantage be added to the list of diseases that are already compulsorily notifiable. Round this subject no little controversy raged, and rightly so. It was agreed that the object aimed at was an excellent one; that the sanitary authority should be made cognisant of the plague spots in its congested areas and among householders huddled together in dark and unhealthy dwellings. It was different however when one came to carefully read certain sections of the Public Health (Scotland) Act, 1897, in an attempt to apply them in actual practice to such a chronic disease as tuberculosis of the lungs. The "unbeliever," if he may be so termed, argued that the restrictions necessarily applicable to such diseases as small-pox, typhus, scarlet fever, &c., could not be imposed upon those suffering from tuberculosis of the lungs. Round this difficulty an acute divergence of opinion established itself. The objectors to compulsory notification were, literally speaking, laughed at. The local authority of Edinburgh boldly included the disease among those that were compulsorily notifiable. Up to the present it is the only important community which has undertaken the heavy task. Shortly after Edinburgh had adopted its scheme of compulsory notification, the Local Government Board set about to amend certain restrictive sections of the Public Health (Scotland) Act. These amendments are now in force, and the worst obstacles to the harmonious operation of compulsory notification have been set aside. The sufferer from tuberculosis of the lungs may now enjoy liberties which, if the Act of 1907 had been strictly interpreted, would have been denied him.

Closely related to notification comes the question of the isolation of advanced, and the treatment of early, cases of tuber-

Digitized by Google

culosis. Not a few local authorities have made arrangements whereby spare beds in the wards of their isolation hospitals are set aside for dealing with those suffering from lung tuberculosis. It goes without saying that the isolation of advanced cases must be for the benefit of the community. The weeding-out process will in the long-run have its effect in eradicating the many discovered zones of infection. Epidemics of acute infections may, by the adoption of resolute measures, be nipped in the bud; but tuberculosis demands much spade work ere it can be rendered an uncommon disease in our midst. To an important aspect of this spade work reference will be presently made.

The treatment of early cases is much more encouraging. The weekly improvement in the physical condition of the patient is so apparent that the value of rational feeding and unlimited fresh air is not lost upon the grateful sufferer. Consequently, not a few former patients are now earning respectable livelihoods, and are living up to the doctrine of fresh air which they learned at the hospital.

Doubtless we shall hear more of the dispensary system so persistently and convincingly advocated by Dr. Phillip. The information gathered at such dispensaries must prove of immense value to a public health department. Also the suggestion to pass on "cured" cases to a farm colony must sooner or later take practical shape, if lasting benefits are to be secured.

Turning now to the more practical side of spade work, to which reference was made, it may be said that local authorities will have to be armed with more drastic powers for dealing with insanitary houses. They must also be provided with easier methods for borrowing money intended for the erection of houses for the working-classes.

In England, by a recent Act, local authorities are granted long periods in which monies may be borrowed for housing schemes. Why Scotland was excluded from the benefits of that Act it is difficult to surmise.

It is unfortunately true that the threadbare argument of housing one section of a community at the expense of another is still advanced by municipal representatives and others. The importance of what lies beyond well-housed citizens is overlooked in the heat of debate, and many local authorities shut their eyes to the clamant needs of the moment.

Digitized by Google

If the incidence of lung tuberculosis is to be reduced, its causes must be attacked at their very foundations.

Before we pass on to recent legislation, mention must be made of one of the startling features of the past year. Epidemic cerebro-spinal meningitis struck heavily at Glasgow in the west, and Edinburgh and Leith in the east. The disease wrought panic in parents' minds. The mortality among children under one year of age was 80 per cent. The writer sought to explain the involvement of Glasgow and Leith by the fact that they were principal centres for the arrival and departure of aliens, many of whom came from infected countries. Without entering into further detail, however, it has been established beyond doubt that infection may be conveyed from country to country by ships, the vast proportion of places attacked having been seaports.

The infection carriers or "intermediaries" harbour the meningococci in their posterior nares, and it is these parts that demand attention by douching if the spread of the disease by infected sputum is to be curtailed.

Coming now to recent legislation, one has to regretfully announce the extension of the conscientious objection clauses to Scotland. It is true the objector is compelled to go to some trouble before he can secure relief, but *cui bono?* Those of us who have been impressed by the readiness with which the virus of small-pox singles out unprotected persons for attack cannot appreciate the arguments advanced by the zealous anti-vaccinator. In Great Britain local authorities, at great expense, are required to erect and equip special hospitals for the reception of small-pox cases. In Germany, where vaccination and re-vaccination are rigidly enforced, such a thing as a small-pox hospital is unknown. It is only on the frontiers of badly-protected countries that Germany has any anxiety from small-pox. We are inclined to resent "mailed fist" methods in this free country of ours. We might have a little less kid glove public health legislation at least. It is a relief to turn to an Act the operation of which in England has proved how another valuable piece of legislation has been denied to Scotland. We refer to the Midwives Act. The practices of many midwive demands close and frequent supervision. This is provided for by the Midwives Act. The work of the Manchester Sanitary Authority in this direction need only be instanced to prove what a fertile field lies before the Medical Officer of Health in

Digitized by Google

Scotland. Midwives are registered, a qualified person lectures to them, kits are overhauled, and surprise visits paid to cases attended by women. Two years ago, for statistical purposes, the writer sought to secure a list of practising midwives in his district. Though many midwives plied their calling, the names of but a few could be collected from the local directory. Visits were paid to those whose addresses were given, and a lamentable condition of affairs was brought to light: ergot was administered as a routine, tincture of opium or chlorodyne being frequently given to stop or ease the pains. When a Higginson syringe was shown it was filthy. A pot contained septic ointment. Condy's fluid was a favourite antiseptic! and rusty scissors did duty for severing the cord.

On January 1, 1908, the notification of Births Act comes into operation. It is an adoptive Act, but we imagine most local authorities will take advantage of the powers furnished by it. The objects aimed at may be said to be ideal, but the means for achieving the end in view do not commend themselves to the general practitioner. We agree with him. The medical man who attends a birth will be required, under penalty, to notify its occurrence within 36 hours to the Medical Officer of Health. For this notification no payment is granted. This is decidedly wrong. It is false economy and is very naturally resented. We think, however, too much importance is attached to the frequently advanced argument of breach of secrecy between doctor and patient. The clauses of the Act protect the physician, because he has no escape. He must notify. When the voluntary notification of such an infectious disease as measles or tuberculosis of the lungs is mooted the practitioner in many cases refuses to be a party to the suggestion. He resents voluntary notification on the ground that he is not protected by a compulsory clause. Now, however, we notice it argued in different quarters that the Notification of Births Act necessitates a breach of confidence on the part of the notifier. It is rather difficult to reconcile these two views. It is impossible to adopt the Notification of Births Act in a semi-voluntary fashion, since the vast majority of births that urgently call for immediate notification will be those attended by midwives. Without compulsory notification there would be no power to demand notification on the part of midwives. We regret that this aspect of the question has been overlooked. The

Digitized by Google

Act is one that will be of very great value to the Medical Officer of Health, whose staff, if it includes among its number tactful and well-trained lady sanitary inspectors, will be in a position to advise neglectful or ignorant mothers. In order to palliate the feelings of practising physicians in his district the writer has issued two sets of notification cards. Those are printed in red type and in black type.

The midwives will only be supplied with red printed matter. The medical men will have both. Visits will only be paid to the cases attended to by medical men when red printed cards are sent by them to the Medical Officer of Health.

Black printed cards will imply that no visitations are necessary. Such a system embodies compulsion cloaked by voluntaryism, and should avoid all friction.

Yet, again, Scotland lags behind England in the adoption of Medical Inspection of School Children. We are promised an Education Act that will legalise medical inspection. Edinburgh, Aberdeen, Govan, Kirkcaldy and Perth have not waited for powers to appoint medical inspectors, but have assumed them.

We observe that in England the Medical Officer of Health is pretending that the work of medical inspection of school children comes under his province. It is extremely difficult for us, who have undertaken a detailed examination of 806 scholars, to imagine how a medical officer of health can ever hope to have time to inquire into the physical well-being of hundreds of children in his district.

The medical officer may reasonably expect to be taken along with the medical inspector, or he may persuade the education authority to provide him with an army of qualified medical inspectors. But, as has been said, to pretend that he can do the work of medical inspection as well as his own is not only to delude himself, but it will go to make medical inspection a mere sham. This important work must be delegated to specially trained and energetic officers.

Other new Acts that come into operation in 1908 have reference to Margarine on the one hand, and Food Purity on the other. They are of special interest to the health official and call for no special comment.

Digitized by Google

LIST OF BOOKS RECEIVED.

1. Practical Course of Chemical Physiology. By D. Noel Paton and Edward P. Cathcart. Wm. Green & Sons. Price 2s.

2. The Morrison Lectures on Insanity. By A. R. Urquhart. Reprinted from Journal of Mental Science. 1907.

3. The Influence of Cod Liver Oil on Tuberculosis. By J. W. Wells. Sheratt & Hughes.

4. Encyclopedia & Dictionary of Medicine and Surgery. Vol. V. Inu-Lum. Wm. Green & Sons.

5. Etude Histo-Chimique et Cytologique des Crachats. By le Dr. S. Israels de Jong. G. Steinheil.

6. Better Hygiene for Children of the Poor. By T. Dunbar Brunton. Scientific Press, Ltd. Price 6d.

7. Ophthalmia Neonatorum. By Sydney Stephenson. George Putman & Sons.

8. Introduction a la Therapeutique Naturiste. G. Steinheil.

9. Medical Diagnosis. By Charles S. Green. Rebman, Ltd. Price 13s. 6d.

10. Tropical Medicine. By Thomas W. Jackson. Price 17s.

11. Modern Methods for Securing Surgical Asepsis. By E. Harrison. A. Brown & Sons (London).

12. A Manual of Diseases of the Nose, Throat and Ear. By E. Gleason. W. Saunders & Co. Price 12s.

13. A Laboratory Manual of Invertebrate Zoology. By Gilman A. Drew. W. Saunders & Co. Price 5s.

14. Treatment of the Diseases of Children. By Charles G. Kerley. W. Saunders & Co. Price 21s.

15. Practical Fever Nursing. By Edward C. Register. Saunders & Co. Price 12s.

16. Diseases of the Intestines and Peritoneum. By Prof. D. Hermann Nothnagel. With additions, by H. D. Rolleston. Second Edition. Saunders & Co. Price 21s.

17. Gynæcology and Abdominal Surgery. By Howard A. Kelly and Charles P. Noble. Vol. I. Saunders & Co. Price 35s.

18. Transactions of the College of Physicians of Philadelphia. Third Series. Vol. XXVIII.

19. Mental and Sick Nursing. By Robert Jones. Scientific Press, Ltd. Price 3s. 6d.

20. Insanity and Allied Neuroses, Practical and Clinical. By George H. Savage and Edwin Goodall. Cassell & Co. Price 12s. 6d.

21. Tropical Diseases. By Sir Patrick Manson. Cassell & Co. Price 12s. 6d.

22. Minor Medicine. By W. Essex Wynter. Sidney Appleton. Price 6s. nett.

23. Pathology, General and Special. By R. Tanner Hewlett. J. & A. Churchhill. Price 10s. 6d. nett.

24. A Short Manual for Monthly Nurses. By C. J. Cullingworth. J. & A. Churchill. Price 1s. 6d. nett.

25. Manual for Hospital Nurses. By Edward T. Domville. J. & A. Churchill. Price 1s. 6d. nett.

26. On Acute Pneumonia. By Seymour Taylor. Henry J. Glaisher. Price 1s. nett.

27. The Prevention of Infectious Diseases. By John C. M'Vail. Messrs. Macmillan & Co. Price 8s. 6d. nett.

28. Some Successful Prescriptions. By A. Herbert Hart. John Bale, Sons, & Danielson, Ltd. Price 1s.

29. Surgical Applied Anatomy. By Sir F. Treves and A. Keith. Cassell & Co. Price 9s.

30. Light and X-Ray Treatment of Skin Diseases. By Malcolm Morris and Dore. Cassell & Co. Price 5s.

31. Hygiene and Public Health. By Parkes and Kenwood. H. K. Lewis. Third Edition. Price 10s. 6d.

32. Vagino-Peritoneal Operations. By Wertheim and Nicholitsch. Macmillan. Price 25s.

33. First Aid to the Injured. Translated by H.R.H. Princess Christian. Smith, Elder & Co. Price 2s.

34. Child Study. By W. B. Drummond. Edward Arnold. Price 6s.

35. Allbutt's System. Vol. III., Stomach, &c. Macmillan & Co. Price 25s.

Digitized by Google

36. Report, Phipps Institute for Tuberculosis.

37. Text-Book of Organic Chemistry for Medical Students. By G. V. Bunge. Translated by R. H. A. Plimmer. Longmans, Green & Co. Price 6s.

38. Medico-Physical Works. By John Mayow (1674). The Alembic Club.

39. Anatomical Terminology, with special reference to the (B. N. A). By Llwellyn F. Barker. J. & A. Churchill. Price 5s.

40. Preventable Blindness. By N. Bishop Harman. Baillière, Tindall & Cox. Price 2s. 6d.

41. Physical Methods in the Treatment of Heart Disease. By A. G. D. Bennett. Wright & Co. Price 3s. 6d.

42. Pelvic Inflammation in the Female. By Thos. Wilson. Wright & Co. Price 3s. 6d.

43. Surgery: Its Principles and Practice. Edited by W. W. Keen. Saunders & Co. Price 30s.

44. The Book of Prescriptions. By E. W. Lucas. J. & A. Churchill. Price 6s.

45. Squint and Ocular Paralysis. By E. Lucas Hughes. H. K. Lewis. Price 6s. 6d.

46. A Manual of Surgery. By F. T. Stewart. Rebman, Ltd. Price 15s.

47. Retinoscopy. By J. Thorington. Rebman, Ltd. Price 4s.

48. Lateral Curvature of the Spine, and Round Shoulders. By R. W. Lovett. Rebman, Ltd. Price 7s. 6d.

49. Marriage and Disease. By Senator-Kaimner. Rebman, Ltd. Price 8s.

50. Precious Stones. By W. T. Fernie. J. Wright & Co. Price 6s.

51. Hygiene of the Lung. By Professor Dr. Leopold von Schrötter. Rebman, Ltd. Price 2s.

52. Obstetrics. By J. W. Williams. Appleton. Price 25s.

53. Diseases of Infancy and Childhood. By L. E. Holt. Appleton. Price 25s.

54. Movable Kidney. By D. Newman. Longmans. Price 5s.

55. Aids to Pathology. By Harry Campbell. Baillière, Tindall & Cox. Price 3s. 6d.

56. Border Land of Epilepsy. By Gowers. J. & A. Churchill. Price 4s. 6d.

57. Le Ventre; Etude Anatomique et Clinique de la Cavite abdominale au point de vue du Massage. By Dr. Cantru and Dr. Bourcart. L. Kundig & F. Alcau.

58. Practical Diagnosis. By H. A. Hare. Sixth Edition. H. Kimpton. Price 21s.

59. Index of Treatment. By R. Hutchison and H. S. Collier. J. Wright & Co. Price 21s.

60. A Guide to the Administration of Ethyl Chloride. By G. A. H. Barton. H. K. Lewis. Price 2s.

61. The Opsonic Method of Treatment. By R. W. Allen. H. K. Lewis. Price 5s.

62. Essentials of Cytology. By C. E. Walker. Constable & Co. Price 7s. 6d.

All Editorial Communications—including BOOKS for REVIEW and EXCHANGE JOURNALS—are to be addressed to THE EDITORS, *7 Manor Place, Edinburgh*, AND NOT TO 43 CASTLE STREET.

Business Communications to MESSRS. WILLIAM GREEN & SONS, *2 St. Giles Street*.

Digitized by Google

THE SCOTTISH MEDICAL AND SURGICAL JOURNAL.

Editorial Notes and News.

The Chair of Clinical Surgery in Edinburgh.

"THE King is dead! Long live the King!" is easy to shout, for the succession in all properly constituted countries is secured. But it will not be easy for His Majesty's advisers to fill Professor Annandale's chair. Before saying anything further, we desire to clear ourselves of the charge of inconsistency. Some years ago we advocated the abolition of the chair, on the ground that it was no longer necessary, and, were the conditions now as they were then, we would be of the same opinion still. But circumstances have very materially altered. The University Court virtually adopted the position which we then took up when it offered all the surgeons to the Royal Infirmary the post of University Lecturers on Clinical Surgery. It thereby virtually admitted that it was no longer possible for one surgeon to adequately teach all the University students, and its offer, which still holds good, was to make all the surgeons, as well as the Professor of Systematic Surgery, teachers of Clinical Surgery, with the Professor of that subject as a kind of *primus inter pares*. To this we conceive no one will take any serious objection. It gives to the school the opportunity of bringing in an outsider should that be thought desirable: it gives the opportunity of placing in the forefront of practical teaching one who might otherwise have to wait years for his promotion to full rank, or of rewarding one who has already demonstrated his capacity as a teacher.

This vacancy raises the age-limit question in an acute form. A professor holds his chair *ad vitam aut culpam*. The Professor of Medicine, for example, can continue to deliver his systematic lectures when the age-limit has required him to resign his post as Physician to the Royal. But a Professor of Clinical Surgery without beds would be ridiculous, and it is obvious that something will have to be done in

Digitized by Google

the matter. It is equally obvious that it should be done now, and not delayed until the new Professor reaches the age of 65. For this and other reasons no surprise need be felt if there is no immediate action.

We understand that all the surgeons and the three senior assistant-surgeons to the Royal, Mr. Stiles, and Mr. Newman and Mr. Barlow of the Glasgow Royal Infirmary, have announced themselves as candidates for the Chair.

The Managers of the Royal Infirmary have placed Mr. Dowden in charge of the late Professor Annandale's wards, and the University Court has asked him to discharge, in the meantime, the duties of the Chair. The Court also appointed the Professor of Systematic Surgery, who is already Lecturer in Clinical Surgery, an Examiner in the subject.

Dr. Clouston's Retirement.

DR. CLOUSTON has imitated another of our Editorial Board—Sir Alexander Simpson—in demitting office while still apparently as vigorous as ever. He has done a great work at Morningside both for his patients and for the scientific advancement of medicine, and nothing is more eloquent testimony to the enthusiasm he imparts to his subordinates than the fact that the majority of the prominent positions in the direction of lunacy in Scotland, and a great many in England, are filled by his former assistants.

The public of Edinburgh has recently had sufficient proof that Dr. Clouston has lost none of his energy, and his retirement from routine work will give him greater leisure for those larger interests which he has so much at heart.

The New Notification of Births Act.

THE Aberdeen Medico-Chirurgical Society, representing the medical profession of Aberdeen, recently appeared by deputation before the Town Council of that City, and presented a memorandum to the effect that the Act should not be adopted until certain necessary amendments had been made in it.

The Council courteously agreed to defer its decision on the subject.

The memorandum is one of the most reasonable, logical and temperate criticisms of the Act that has come under our notice, and is in marked contrast to some which have appeared. It points out—1. That it is not necessary that notification should be by a medical man. In the case of the notification of infectious disease he is stating a skilled opinion; in notifying a birth all that is notified is a fact which is obvious to everyone.

Digitized by Google

2. That nothing is gained by compelling medical men to notify. If a medical man is in attendance, he will give the instruction regarding the rearing of the child, which the Health Department will do where no doctor is in attendance.

3. That it is contrary to the usage and best traditions of the profession to give any information acquired in their practice, except in cases where the law requires a report *in the interests of the public welfare*, and that this Act may lead to persons running needless risks by dispensing with skilled attendance.

4. That to make the neglect of gratis work punishable by law appears to be scarcely within the bounds of common justice.

The memorandum concludes by suggesting that should Aberdeen, like Manchester and some other cities, decline to put the Act into operation, it will help to draw the attention of the Government to certain anomalies in the Act requiring amendment; for, in order to make the Act of real service to the public health, the hearty co-operation, and not merely the tacit assent of the medical profession is necessary.

In Edinburgh no opposition was offered by the profession, and the Act came into operation on 1st January. In the notice intimating the fact to the profession the Medical Officer of Health draws attention to the provisions of the Act, viz., that the duty of notifying lies on the father of the child, if he is actually residing in the house, and of any person in attendance at or within six hours of the birth, and that the births of still-born children are to be notified. This is not the least valuable feature of the Act.

Addressed and stamped post-cards are supplied to medical practitioners and midwives gratis. It is no doubt possible to make too much of the matter, but we cannot help feeling that letter-cards would have been more suitable. There are, however, certain spaces on Sir Henry's post-card which we do not recollect noticing in the Act itself. The attendant is asked to fill in the name of the child's father. We read recently in a medical journal of an American doctor who was confronted with the problem of filling up a similar space in a case where there was some dubiety. He got out of his difficulty by filling in the line with the motto of the United States.

If for any reason the notifier thinks a post-card unsuitable, we believe that the authorities will have no redress if he encloses the post-card in an envelope and posts it unstamped. When the notification of infectious diseases was done under Edinburgh's own Act stamped envelopes were supplied gratis. When the General Act was adopted this was stopped. We understand that the question has been raised and settled in England that doctors are entitled to be supplied

Digitized by Google

with stamped envelopes, and cannot be proceeded against if they post the notices unstamped.

After all, the smooth working of the Act will depend on the amount of common-sense shown by those responsible for its working. There is no doubt that it contains certain undesirable provisions. If the officials so administer it as to obviate these, we may get along all right. If they show a want of tact in their administration, then the Act will require to be amended.

Diet and Endurance.

SOME time ago we called attention to the remarkable observations of Professor Irving Fisher upon the influence of diet on endurance. It will be remembered that Professor Fisher carried out a series of tests of muscular endurance upon a number of Yale athletes in full training and on ordinary diet, and a similar series upon a number of persons who had lived for prolonged periods upon a low proteid dietary, and who were in the habit of taking comparatively little exercise. The general result of these tests was to show that the power of endurance was very much greater in the latter cases in spite of their want of athletic training.

A study on somewhat similar lines has recently been carried out in Brussels by Mlle. Dr. J. Joteyko, head of the laboratory of the University of Brussels, and Mlle. Varia Kipiani, student of science. Mlle. Joteyko is well known through her researches on "Fatigue," concerning which she has published a number of very interesting and elaborate papers. In studying fatigue Mlle. Joteyko made great use of Mosso's "ergograph." The same instrument was used in the present researches, the results of which have been published in the form of a monograph entitled "Enquête Scientifique sur les Végétariens de Bruxelles."[1]

The authors compared the endurance of 17 vegetarians—6 men and 11 women—with that of 25 flesh eaters. It was found that the former surpassed the latter by an average of 53 per cent. On comparing the 2 groups on the basis of the number of times the weight could be lifted by the finger it was found that the vegetarians could continue to work the ergograph for 2 or 3 times as long as the flesh eaters.

This last result corresponds to that obtained by Professor Fisher. Making use of gymnasium tests, Fisher found that the muscular endurance of flesh abstainers was 2 or 3 times as great as that of flesh eaters.

The results obtained by Mlles. Joteyko and Kipiani agree with those of several recent investigators. There are, however, some

[1] Brussels, Henry Lamertin. Pp. 77.

Digitized by Google

differences of opinion as to whether these results are to be attributed to the superiority of a non-flesh or simply of a low proteid diet. Most of the American observers, such as Fisher and Chittenden, avoid the use of the term vegetarian, and point out that a flesh eater, if he consumes but little meat, may have the advantages of a low proteid dietary, while a vegetarian, by selecting his food badly, may suffer from the evils of high proteid.

The Brussels investigators, by an elaborate mathematical study of the graphic fatigue curves, come to the conclusion that an important factor in fatigue is the accumulation of substances which have a toxic effect upon the muscles. These substances accumulate more rapidly and in greater abundance in flesh eaters than in vegetarians.

Recuperation from fatigue also takes place more rapidly in the vegetarians—a result also obtained in the Yale experiments.

The authors in conclusion advocate a vegetarian dietary for working men, partly on economic grounds, and partly because they believe it would increase the production of labour, and reduce the number of accidents which result from over-fatigue.

The late Professor Lassar.

PROFESSOR LASSAR died on 22nd December from the effects of an accident. His name was best known to the profession in connection with the famous paste, the use of which he did so much to popularise. The importance of large amounts of powder in ointments was recognised long ago by Erasmus Wilson, but it was to Lassar's advocacy that its general adoption by the profession was due. At his magnificently equipped private clinique in Berlin he had ample opportunities, which he took full advantage of in teaching graduates. He spared nothing to make his demonstrations as useful as possible, and his collection of lantern slides, &c., must be nearly unique. Over and above his own special work, he was a man of abundant energy, and gave much of his time to public interests both in matters of health and in general politics.

The late Sir Thomas M'Call Anderson.

JUST as we go to press we learn of the tragically sudden death of Sir Thomas M'Call Anderson. Some months ago he was far from well, and got some months' leave of absence from the University. But the rest seemed to have done him good, and though no longer his old self, he seemed to have the possibility of some years of work before him. We hope to publish an obituary notice in our next issue.

Digitized by Google

The Journal.

WHEN the *Journal* was founded, over ten years ago, the necessary capital was provided by the subscription of members of the profession, and shares were allotted to them when the present company was formed. Many of the original shareholders have passed away. It is desirable that these shares should be held by members of the profession only, and no doubt many who have "arrived" since 1897 will be glad to take a practical share in the management of the *Journal* by becoming the holders of these shares. Communications should be made to Dr. M'Kenzie Johnston, 2 Drumsheugh Gardens.

Royal College of Physicians of Edinburgh, Royal College of Surgeons of Edinburgh, and Faculty of Physicians and Surgeons of Glasgow.

THE quarterly examinations of the above Board, held in Edinburgh, were concluded on 24th inst., with the following results:—

First Examination, 5 Years' Course.—Of 36 candidates entered the following 18 passed the examination:—Michael Joseph Ahern, Co. Kerry; Probhat Chandra Mukherji, India; Nripendra Nath Chandra, Calcutta; Anath Nath Palit, India; William John Mitchell White, Glasgow; Edward Esdale Williams Shiels, Dundee; Walter Stewart Durward, Edinburgh; Mrs. Dwarkabai Kamalakar, Bombay; John Napper Nevill Atkinson, Londonderry; Solomon David Bridge, Glasgow; Singcha Hoashoo, South America; Krishnarao Ganpatrao Dhairyawan, Bombay; Chandiprasad Trivedi, India; Marcel Francois Auguste l'Hoste, Mauritius; Bhola Nath, India; Kaithail Koshi Jacob, Travancore; Charles Leonard Webb Fleming, Barbados; and Lionel Edward Louis Coghlan, Longton; and 6 passed in Physics, 2 in Biology, and 1 in Chemistry.

Second Examination, 4 Years' Course.—Mr. William Alexander Irwin, Co. Cork, passed the examination.

Second Examination, 5 Years' Course.—Of 27 candidates entered the following 11 passed the examination:—William Browne, Co. Derry (with distinction); Maurice Cameron Anderson, Edinburgh; E. R. Jones, Bangor; Bikramajit Sahni, Punjab; Cæsar Jenaro Lacayo, Grenada; Kathleen Reed, Calcutta; Howard Vivian Alexander Gatchell, Ireland; James Blackburn, Ireland; Charles Gordon Timms, Melbourne; Chandiprasad Trivedi, India (with distinction); and Bhola Nath, India; and 1 passed in Physiology.

Third Examination, 5 Years' Course.—Of 35 candidates entered the following 18 passed the examination:—William John Cogan, Cork; Robert Wylde Pickup, Dukinfield; Charles William Gee, Wigan;

Digitized by Google

Hugh Millar, Ayrshire; Cornelius O'Herlihy, Cork; Syed Abdul Karim, India; Harold Gordon Chouler, Port Elizabeth; Robert Massie, Edinburgh; Patrick Reid, Co. Carlow; Llewellyn Etter Davies, Southport; MacWilliams Henry, Halifax; Thomas Brownlie M'Kendrick, Wishaw; John Patrick Synnott, Meath; Harold Henry Field-Martell, Australia; Krishnarao Ganpatrao Dhairyawan, Bombay; William Richard Griffith, Abergele; and Sydney Sharples, Preston; and 3 passed in Materia Medica.

Final Examination.—Of 76 candidates entered the following 26 passed the examination, and were admitted L.R.C.P.E., L.R.C.S.E., and L.F.P.&S.G.:—Robert Dick Orok, Canada; John Henry Clemens Hicks, Ballarat; Charles Alexander Page, Toronto; Meade Leahy Ford, London; Matthew Hamilton Fleming, Lanarkshire; William Cape Doughty, London; Edmund Clark Kinkead, Jamaica; Ethel Adelaide Orchard, Victoria; Mathew Edward Grimshaw, Ontario; William Fraser M'Kenna, Newton-Stewart; Framroz Maneckji Vajifdar, Aden; Herbert Wallace Kerrigan, Co. Derry; John Macdonald, Newtonmore; Clement Hoyle Heppenstall, Lincoln; Mundkur Shiva Rau, India; William Stephen Scheck, Canada; William Wallace M'Kinley, Ontario; David Welsh, Lanarkshire; Alexander Henry Meyler Maxwell, Victoria; Satischandra Das, Calcutta; Caroline Lizzie Kohlhoff, India; Zerk Daniel Lotter, South Africa; Walter Henry Wijenayake, Ceylon; Joseph Louis Pinto, India; Sakharam Ramchandra Bhagwat, India; and George Lindsay Irwin, Co. Donegal; and 9 passed in Medicine and Therapeutics, 7 in Surgery and Surgical Anatomy, 15 in Midwifery, and 13 in Medical Jurisprudence.

A HUNDRED CONSECUTIVE OPERATIONS FOR APPENDICITIS: SOME DEDUCTIONS THEREFROM.[1]

By J. W. Dowden, F.R.C.S.,
Assistant-Surgeon to the Royal Infirmary.

I.

The literature on the subject of appendicitis is enormous. Among the reasons for this—apart from the natural interest in the affection—are the various methods of treatment adopted, and the diverse indications for operation which physicians and surgeons of repute have put forward.

[1] Communicated to the Edinburgh Medico-Chirurgical Society, January 15, 1908.

Digitized by Google

That the medical treatment in the acute form of this disease is unsatisfactory can be gauged by the fact that there is no practitioner of experience who, in attendance on a case, can feel certain that he knows what is taking place in the right iliac fossa, and that his treatment will result in recovery. All the time he is oppressed by the uneasy feeling that at any moment serious symptoms may manifest themselves.

The medical man is not the only person who is uneasy about the treatment of this grave disease. The public, alarmed by the many tragic occurrences in well-known families, are asking searching questions, such as, "If the operation had been done earlier, would the patient have had a better chance?" and, "Is the operation such a very serious one, because we have seen deaths announced in the papers as 'following an operation' for appendicitis?"

Some years ago, when my experience was mainly confined to assisting other surgeons in their operations, my interest was strongly aroused in this most treacherous complaint, and the conclusions arrived at then were strongly expressed elsewhere. Strengthened now by an experience of over 100 consecutive operations my adherence to these conclusions is stronger than before.

It is impossible for me, with the short time at my disposal, to enter into detail, and therefore my remarks will be confined to the main facts which induce me to take up a fixed and definite attitude in the treatment of this disease, confining my statements almost entirely to acute forms of the complaint.

The appendix is usually dependent on a single artery for its blood supply, and consequently unable to cope satisfactorily with the more urgent demands for blood which severe inflammation calls for. It is impossible to answer the question, "What is the cause of appendicitis?" but in so many of my cases there has been an unclean condition of the mouth that it cannot be ignored as a predisposing factor. Frequently carious teeth were present, and, not uncommonly, enlarged tonsils, and more than one observer has noted the association of tonsillitis with appendicitis. A septic portal to the alimentary canal must sooner or later produce a greater amount of contamination throughout its whole length than is generally the case. As to local factors in the appendix, which predispose to inflammation, the most obvious are concretions and kinks.

Digitized by Google

Sex as a Predisposing Factor.—In my series of 100 operations 82 were acute cases, and of these 52 were males and 30 females, while the "interval operation" was performed on 14 males and 4 females.

Age as a Factor.—Of the acute cases, 50 were attacked between the ages of 16 and 30 inclusive, 16 were over the age of 36, the oldest being 63, 16 were under the age of 16.

Previous attacks, a fact which is well known, predispose to this inflammation, and in the series before you 37 had had one or more attacks. In one woman 30 years elapsed between her first and second attacks. Deaver, the well-known authority on this subject, says that 75 to 80 per cent. have subsequent attacks.

The pathological classification is very varied, but, clinically, the varieties may be considered as acute or chronic. Those who have been treated for an attack can be divided into those who are cured and those who are not. Those who are cured have had their appendices removed. Those who are uncured retain their appendices, or have gone hence where such things cease from troubling.

Symptoms and Diagnosis.—The average case of appendicitis when seen early exhibits typical symptoms, often spoken of as "cardinal symptoms." There is a history of pain, somewhat sudden in onset, and not infrequently awakening the patient in the early morning. The pain, colic-like in character, is referred to the region of the umbilicus or the epigastrium, and is generally followed by vomiting. It is often on account of these symptoms that the treatment for acute indigestion is prescribed. The pain gradually shifts to the right iliac fossa, where it remains, continuous in type with, at times, exacerbations. A varying degree of fever is usually present. On examination of the abdomen the right lower quadrant moves imperfectly with respiration, and palpation in this region elicits tenderness and rigidity, usually most marked at M'Burney's point.

The diagnosis is, as a rule, easy when the patient is seen early, but when the onset is very sudden and severe, or complications have arisen by the time the medical attendant is asked to see the case—not an uncommon event—a definite conclusion is at times impossible, and all that can be determined is the presence of some serious abdominal condition.

The administration of opium renders not only a definite

Digitized by Google

diagnosis difficult, but masks the severity of the attack to a very serious extent. It cannot be too strongly emphasised that every attack of so-called acute or sub-acute indigestion calls for a most careful local examination, including, if there is doubt, a rectal examination as well.

The cardinal symptoms of the disease should be always most prominently kept in mind lest slight deviations should lead the examiner astray.

There is a factor which is apt to delay a diagnosis, and that is the presence of painful spots or areas outside the region of the appendix. The commonest position is to the left and a little below the level of the umbilicus, and on palpation is quite marked. With such a symptom it is helpful to carry out the physical examination in the following manner:—Kneeling on the right side of the patient the right hand palpates the appendix region inducing pain; without removing this hand the left should be carefully pressed over the other painful areas, when it will be found that tenderness has disappeared or is very much decreased. If it remains as before there is an appendix passing over to the left side—if the pain is mainly there—or a peritonitis is spreading generally from the pelvis.

In very severe attacks, or where serious complications have rapidly taken place, any abdominal catastrophe may be simulated, and the main point then is not whether to open the abdomen, but where to open it. Three cases so closely resembled perforated ulcer that the duodenum and the stomach were explored first, and later the appendix. Peritonitis was present in all of them, and all of these patients had been under medical treatment for over 24 hours, and been ill for 2 days at least. Another patient was explored over the appendix where peritonitis was found, and the duodenum being examined, through a fresh incision, revealed a perforated duodenal ulcer. Three of these cases recovered.

Two cases of ovarian tumour, with twisted pedicle, closely simulated appendicitis with abscess formation. Both recovered.

A ruptured pyosalpinx exactly simulated appendicitis, but an early diagnosis of severe abdominal lesion by the medical attendant enabled an early operation to be performed, with recovery.

One case was sent to hospital with the diagnosis of suppurative arthritis of the hip joint. A large appendicular abscess was found of many days' duration extending below Poupart's ligament.

Digitized by Google

These, of course, are only a few of the conditions which simulate appendicitis.

When a diagnosis of appendicitis has been arrived at, is it possible to gauge the condition of the appendix or its surroundings by the symptoms? The answer to this query is, Not accurately, and, what is more, there is nobody, however skilled, who can tell this with any degree of certainty, or what the termination of the case may be. This is the crux of the whole question of treatment. The local symptoms, the pulse, the temperature, the leucocytosis, even the appearance of the patient—usually so reliable—at best only give an indication of what has taken place, not what is going to occur. These facts must be obvious to all.

Morbid Anatomy.—The most striking point in the morbid anatomy was the rapidity with which changes took place in the appendix and its surroundings. The conditions found at operation bore out absolutely how impossible it is to tell at all accurately the state of the organ from the symptoms.

After-Results and Prognosis.—When appendicitis is diagnosed the prognosis is a very serious one, rendered much more so when pus is present, and of the worst when general peritonitis exists.

That the large majority recover from their first attack is undoubted, but it is impossible at the beginning of an attack to say which case will and which will not.

It can, however, be foretold that a very large number will suffer from subsequent attacks, and it is impossible to prophesy the severity of these later illnesses. Thirty-seven per cent. of my cases had previous attacks, 19 of whom required operation on account of the severity of the attack, and 3 of these died. Lastly, it is impossible to insure such patients as first-class lives so long as they retain their appendices. If in a first attack an early diagnosis is made, and an early operation at once proceeded with, the removal of the appendix can be carried out through an incision planned to avoid the possibility of subsequent ventral hernia. The removal of the appendix is an easy operation as a rule, the acute symptoms rapidly subside, and the patient can be allowed up in a fortnight at the latest, with the guarantee that there will be no subsequent attacks, and a bar to life insurance removed. The prognosis is extremely good. Only 11 patients have been operated on by me at this early stage and all have recovered,

Digitized by Google

with excellent results. If an abscess has developed in connection with the attack the serious nature of the prognosis is enormously increased, and an operation is performed often with difficulty, and the unsatisfactory feeling that pockets of pus may be passed over, with subsequent ill-results.

The early local dangers are peritonitis, multiple abscesses, obstruction. One case required an anastomosis between the ileum and the ascending colon early in the third week. The general dangers are of course septicæmia and pyæmia.

Late local dangers which arise after operation, when the appendix is left, are the possibility of subsequent attacks. Even if the appendix be removed at the same time as the abscess is dealt with other abscesses may arise even many weeks after the first operation. This complication occurred in two of my suppurative cases. Persistent fæcal fistula may persist. Bands, potential causes of obstruction, may be present, and one case of acute obstruction, which ended in death, was operated on 3 years after an attack of suppurative appendicitis. Ventral hernia is of comparatively common occurrence.

It need hardly be said that many patients are permanently disabled by ventral hernia or by the exhaustion associated with a long suppurative process, though their lives have been saved. Suppuration was present in 58 of my cases and the mortality was 14. There is scarcely a ward on the surgical side of the Infirmary that has not its case of suppurative appendicitis lying in it.

Treatment.—From my experience I have not the very slightest hesitation in saying that, with our present powers of diagnosis, the only logical life-saving treatment for this disease is the removal of the appendix at the earliest moment.

It is impossible for me to understand how anyone who has studied the subject, and its pathology, can for one moment advise anything else. From the merest knowledge it is possible to say that a septic focus of unknown degree in the most intimate relation to the general peritoneal cavity is a most serious condition, and the only safe treatment is to get rid of it lest other dangers arise.

The surgeon should be called in, not as a last resort, but at the very first; there will be fewer tragedies, and the public will gain more confidence in us than they have already, when appendicitis manifests itself.

Digitized by Google

It may be said that the patient's relatives were very averse to operation, and so postponement occurred. Everyone is averse to operation, but in such cases as these the duty of the medical attendant is to throw the onus of delay on the relatives, otherwise he may be blamed if the termination be a fatal one.

The appendix should be removed, always provided, of course, that it does not entail danger to life, and it will be found that the more experienced the surgeon the more frequently he removes the appendix in suppurative conditions.

It may be said that there are times when a surgeon cannot be obtained, or an interval must elapse before he can operate. In such cases never give morphia. Put the patient on starvation treatment, with enemata of salines after the bowels have been cleared out first by a soap and water enema, and locally apply cold or heat, whichever is most comforting.

If a patient recovers from an attack, however mild, he ought to have his appendix removed.

The so-called interval operation with its small mortality is performed on the survivors of acute attacks, and this should be borne in mind.

100 Consecutive Operations for Appendicitis.

		Males.	Females.	Mortality.
Acute cases . .	82	52	30	16
Interval cases (survivors of acute attacks)	18	14	4	0
Total,	100	66	34	16

Acute Cases.

Ages.	Cases.	Mortality.
16 to 30	50	9
Over 30	16	1
Under 16	16	6

Nineteen suffered from previous attacks, and 3 died. Suppuration present in 58 patients. Mortality 14.

Digitized by Google

	Number.	Mortality.
Operations on 1st day	11	0
„ 2nd „	16	2
„ 3rd „	18	7
„ 4th „	10	1
„ 5th „	5	2
„ 6th „	1	1
„ 7th „	7	2
„ after 7 days . . .	14	1
Total,	82	16

SOME EXPERIENCES WITH X-RAY AND HIGH-FREQUENCY TREATMENT.

By F. GARDINER, M.D., B.Sc., F.R.C.S.

It is only after some years of trial with remedies like the above that one can take a comprehensive view of their usefulness. Unfortunately the new broom is not unknown in medical as in other spheres, and accordingly these methods were almost classed as panaceas when first introduced.

Now their limitations are recognised, and within these limitations are a large number of conditions for which they can be used as ameliorating if not curative agents.

Originally commenced chiefly as a study of their effects in tuberculosis, the research has gradually widened as cases came to hand.

Apparatus.—A 10-inch Schall coil was always used, and worked in earlier experiments with 24-volt accumulators and a Mackenzie-Davidson interrupter, later an autonome (Gaiffe) interrupter has been used in conjunction with a switchboard resistance giving 180 volts from the main.

With a milliampère-meter in circuit, it was generally possible to keep the current going through the X-ray tubes at about 1 m.a. Much is written about accurate measurement of secondary currents, and new instruments for this purpose are always appearing. Radiometers, pastilles, electroscopes, &c., are always useful, but the best of all is knowledge of one's own

Digitized by Google

apparatus. Unfortunately this most valuable asset is only gained by experience.

Milliampèrage is not everything, as it varies with the voltage in the primary current when the same tube is used. A safe rule to start with is to use a tube with about 4 inches spark gap, run about 0·5 to 0·8 m.a. through, and then use more as experience is gained.

Concerning shields, they have 3 advantages—they give safety to the operator and patient, and, in the writer's estimation, increase the local effect. The harmful action of X-rays is now well recognised and is easily prevented. In spite of 7 years' regular work, it has been my good fortune to escape unscathed. At first rash in ignorance, I have regularly used gloves for the last 5 years when working with the screen to test the tubes, &c., and for 4 years, in addition, various forms of shields have been employed, ending with the more satisfactory apparatus made by Dean.

The high-frequency apparatus is that made by Gaiffe, and includes condenser, resonator and couch. Generally 250 m.a. were given for 10 minutes with the patient on the couch, and this was increased to 400 or 500 m.a. at subsequent appearances.

The resonator was used for the vacuum electrode with a Bisserie sparking handle. If spraying was desired, the patient held a handle attached to one end of the resonator, and the spray attached to the other end of the resonator was directed to the affected part. By this method it was possible even to get 7 or 8 inches of spray. Another method was to replace the spray by a moist electrode fastened to the affected part, the handle to the other end of the resonator being used as before. Sometimes it was found advantageous to combine these methods.

Pulmonary Tuberculosis.—Ten cases in various stages have been treated with high frequency. I am aware that other observers have treated a greater number and recorded good results, the few here noted were mostly diagnosed by other authorities. With the intention of getting a good general and local effect, the patients were given 10 minutes on the couch, and then 5 to 10 minutes by spraying on the chest anteriorly, posteriorly and laterally.

Case 1.—B., female, æt. 34, unmarried. Impaired percussion

Digitized by Google

note at both apices. Bronchial breathing at upper part on both sides. No accompaniments. Menstruation ceased for 1 year. Twelve séances, one every third day, were given, and at the end of that time the patient had gained 7 lb. in weight and felt stronger, but menstruation has never returned. Since December 1903, when this treatment was given, she has had fair health without serious illness.

CASE 2.—H., female, æt. 28, unmarried, dressmaker. She had recurrent mild attacks of pleurisy and slight dulness at left apex; no accompaniments. From November 1903 to October 1904 (omitting July and August), she had 96 séances lasting from 10 to 15 minutes, given twice or thrice weekly. Her general tone was very much improved, but she has since had slight pleurisy and development of tuberculosis at left apex. As this patient had to work very hard and constantly, and got little fresh air, the result was encouraging.

CASE 3.—W. S., male, clerk, æt. 24. Left base revealed crepitations and left apex dulness. Led an open-air life after office hours. Sputum, small in amount, contained tubercle bacilli intermittently. In August 1906 he had 10 H. F. exposures, with practically no benefit except a feeling of increased vigour. Since then he has developed more active mischief at the right apex.

CASE 4.—J. B., æt. 30, traveller. Dulness at both apices, with prolonged expiration. Posteriorly there were occasional crepitations at the right apex. He was given 28 exposures from December to March 1904. General improvement was noticed, and he gained a slight increase in weight. Directly after he went on holiday and developed a serious hæmoptysis. Since then he has been in fair health and able to do a full day's work.

CASE 5.—A. A., æt. 40, commission agent. Dulness at both apices, anteriorly and posteriorly. A very few crepitations on each side. This was a very chronic case, steadily improving, and 10 exposures produced a general bracing effect with no local change. He has since got entirely well.

CASE 6.—J. D., æt. 26, tailor. An old phthisis case, with previous hæmoptysis and later a prevertebral abscess. When

Digitized by Google

convalescent from this he was examined, and both apices posteriorly showed dulness and crepitations. Ten H. F. exposures produced a marked general benefit and rapid increase in weight. The pulmonary condition is since cured.

CASE 7.—D. E., æt. 25. Advanced pulmonary tuberculosis, with cavity formation, both lungs widely involved. In 1903 10 H. F. exposures given. No obvious improvement either locally or generally. He still has active disease.

CASE 8.—J. M'H., æt. 26. Advanced cavity formation in both lungs. 6 H. F. exposures given. No change in physical signs. Has since gone to the country, but is only fit to take short walks.

The following 2 cases were of the scrofulous type, with sinuses about the neck, &c.

CASE 9.—M. R., æt. 35. Advanced phthisis at both apices. Had sinuses on the shoulder following a septic wound. Twelve H. F. exposures in April 1904. There was marked general benefit. Sinuses healed up, but pulmonary signs were left unchanged.

CASE 10.—D. B., æt. 28, clerk. Consolidation of both apices. Sinuses in region of neck and front of chest. In November 1902 was given 12 H. F. exposures. Here also there was slight general improvement. Subsequently X-ray treatment was given to the sinuses. Eventually he died of general tuberculosis.

In summing up these results, it is well to state that most of the cases were getting general treatment, such as oleum morrhuæ and creosote, at the same time, but they had it before and after the electrical course. No case showed signs of febrile reaction after the first few exposures as has been recorded by some observers. All benefited to some extent. There was a toning up of the nervous system, general increase in physical stamina, and mostly an increase in weight. The important point is that there never appeared any change in the physical signs in the lungs. The method may be therefore regarded as a very useful adjunct with no specified effect on the tuberculosis, so far as these results show.

Glandular Tuberculosis.—The following 9 cases were treated by means of X-rays. Some observers have noted good effects, and I

Digitized by Google

am happy to be able to verify their results. So strongly do I feel on the matter as to advise that, when there is no pus very evident, cases should be X-rayed, and success will generally follow where there is no deeper source of irritation, such as from a carious bone. If there is pus it often points more rapidly, and the abscess can be opened, stuffed, and treatment of the sinus continued.

CASE 1.—Miss M., æt. 28. Glands enlarged on the right side of the neck—several the size of large plums. She had 5 exposures within 18 days—each exposure lasting 10 minutes, and the tube had a 5-in. spark. After a fortnight they were diminished to half the size. Unfortunately, domestic troubles prevented a continuance of treatment and I have since lost sight of her.

CASE 2.—Miss L., æt. 18, shop-girl. Suffered from this affection for 13 years. There were large swellings the size of tangerine oranges, and a year or so previously several glands had been excised under chloroform. Fifteen exposures during 2 months, and other 6 exposures after a 2 months' interval were administered, and on the last occasion the glands were reduced to the size of large peas. Both sides were affected, and the duration of each sitting varied from 5 to 15 minutes to each side; on no occasion was there any but the slightest erythema. Six years have elapsed and there has been no severe recurrence. It was interesting to watch in this as in other cases the resolution of the large swellings into the separate glands which combined to form the large masses.

CASE 3.—G. H., female, æt. 20. Two or three masses, the size of walnuts, confined to the left side. Operation was proposed but refused. Thirty-one exposures of 5 to 10 minutes' duration were given, extending over 4 months, with complete removal as a result. Five years later there is still no sign of recurrence.

CASE 4. — M. D., æt. 24, female. Both sides affected, and glands were enlarged to the size of large plums. They extended down to the lung, and produced dulness at the left apex posteriorly and anteriorly. Treatment was prolonged over 7 months, and 75 exposures of 10 to 20 minutes' duration were given to each side, and only small pea-sized nodules were left, and the dulness at the left apex cleared up. Five years later, this patient has recently

Digitized by Google

developed enlarged glands on the left axilla, but the neck remains unaffected.

CASE 5.—J. J., male, æt. 35. Gland, the size of a small bean, on the right side of neck below the ear. Carious tooth removed. Was given 7 exposures of 5 to 15 minutes' duration, but absolutely no change resulted. I could find no other source of irritation, and unfortunately have got no subsequent history.

CASE 6. — L. B., æt. 30. Enlargement was in submaxillary region to the left side, and was the size of a plum. Only 2 exposures of 15 minutes, each at an interval of a week, were given and the condition disappeared. No recurrence after a year.

CASE 7.—M. B. æt. 42. Gland as large as a small orange on the left side behind the angle of the jaw. Twelve exposures of 8 to 12 minutes, extending over 5 weeks, were followed by removal of the mass. Four years have elapsed, and some months ago pulmonary tuberculosis developed, curiously enough at the apex of the same side, although there is no sign of a glandular enlargement.

CASE 8.—A. M., male, æt. 33, tailor. Mass as large as a plum on the right side below the angle of the jaw, lasting for 6 months. Excision was advised. Ten exposures of 5 to 15 minutes, spread over a period of 6 weeks, were followed by removal of the condition. Nine months later there was no re-appearance.

CASE 9.—L. M., æt. 28. Glandular enlargement in the left axilla, which had increased to the size of a walnut, was treated with 3 exposures of 15 minutes each, once weekly for 3 weeks. The enlargement disappeared afterwards, and 4 months later there was no recurrence.

The treatment is a painless one — although it may be prolonged, but it has been very successful in these and other cases. To the lay mind an operation is a *dernier ressort*, and to the fond mother or modern young lady a healthy scar is a hideous infliction. Even with the most skilful surgery sinuses are sometimes left which accentuate the deformity, and if X-rays are not

Digitized by Google

always successful yet the percentage of cure is very high. Again, if failure to remove results, the disease is at anyrate more limited, and operation can then be carried out. Lastly, may the treatment be followed by spread to other organs? This is a possibility which I am inclined to minimise, although it cannot be proved. It must be remembered that these patients have a constitution prone to tuberculosis, and this may break out anywhere, so that although some of my cases have been followed by further developments, yet they may have developed these in any case. Many patients feel physically better after X-ray treatment, and especially in this class of case it is pronounced in my experience.

Scrofuloderma and Tubercular Sinuses. — These have yielded encouraging results with X-ray treatment although only 3 cases came under observation.

CASE 1.—A. T., male, clerk, æt. 28. Suffered from a glandular mass on the right iliac fossa, with general involvement of the skin above, and 5 or 6 discharging sinuses—the whole covering an area of 5 inches in diameter. The condition had been under treatment elsewhere for 8 years. X-ray treatment was carried on for 15 months, with 2 months' intermission for a reaction. The duration of each exposure varied from 10 minutes in the first 6 months to 20 minutes in later 9 months—in all 48 times. At the end of that time—6 months ago—the glandular mass was reduced to ⅓ of the size, and the cicatrix, which showed only 2 small sinuses, occupied an area 1½ inches in diameter. The patient has a pulmonary affection, and was given oleum morrhuæ and creosote in addition internally. As telangiectasis had developed locally, tuberculin injections have since been given instead of the above treatment, and improvement steadily progresses.

CASE 2.—J. I., male, æt. 12. Small discharging sinus under the chin, with slight enlargement of the gland underneath it. This was first scraped, but not healing readily, 8 exposures of 10 minutes' duration each were given within a month, the condition then being healed. I have heard since that the disease recurred 2 years later.

CASE 3. — D. B., æt. 28 (same as Case 10, of pulmonary tuberculosis). Numerous sinuses were present in the region of

Digitized by Google

the neck, sternum and clavicles. Twelve exposures each of 10 minutes' duration were given, spread over a month, and again repeated 2 months later, and the result was a very manifest improvement, with closure of several of the sinuses; but, as previously stated, the patient died of general tuberculosis.

Tabes Mesenterica.—Only 2 cases were treated, and both in young children who were somewhat unruly from fright.

CASE 1.—G. R., male, æt. 8. The abdomen was very much enlarged, the child otherwise was thin, and within a month of the condition becoming pronounced a sinus with fæcal discharge near the umbilicus appeared. Eight exposures were given in 3 weeks, each lasting from 10 to 15 minutes. At the end of a week the sinus had stopped discharging, and later reduction of the swelling and complete healing resulted. The child was strong and well 6 months ago—3 years after the treatment.

CASE 2.—W. R., æt. 5. Very marked case occurring in a tubercular family. Six exposures as above were followed by reduction to $\frac{2}{3}$ of size. Owing to domestic trouble the treatment could not be continued, and tuberculin injections were substituted, with complete cure as a sequel. The child, 2 years later, is strong and free from disease.

Laryngeal Tuberculosis.—G. M., male, æt. 30. Suffered from great hoarseness and pain. The cords were ulcerated and the mucous folds swollen, and the whole condition had gone on for some months.

Thirty exposures, lasting 5 to 10 minutes each, and extending over 6 weeks, were given, the rays being directed on the outside of the larynx. Almost immediately the pain was relieved, but it gradually returned and the final result was nil. I have no subsequent history.

Lupus Vulgaris.—Much has been written, and the undoubted value of X-rays proved in this disease, and it is not necessary to say much, therefore, except as to the minutiæ of methods.

In my opinion a soft tube 2-inch spark gap and 1 m.a. of secondary current is best; further, after 1 or 2 preliminary exposures to test the individual idiosyncrasy, it is more con-

Digitized by Google

venient, and probably more satisfactory, to give a good long exposure of, say, 20 minutes, and then wait 3 weeks. As a matter of routine, I keep the distance of the anticathode 15 c.m. from the skin. It may not be according to scientific teaching, but in addition to limitation of the effect, the leaded glass cylindrical applicators of the shields appear to intensify the local effect. While holding that it is right to get a slight reaction, one finds cases do well sometimes without it, and certainly a severe reaction is to be avoided. Where there is much exuberant growth of tissue time should be saved by using a cauterising agent, and in the later stages, by means of spiking with pure carbolic acid, isolated nodules may be extirpated. These measures are not likely to increase scarring, but deep cauterisation or scraping is not advisable if the disease is yielding satisfactorily. Among the most difficult cases to eradicate are those where there is much fibrous tissue—it seems to impede the action of the rays, and no doubt delays healing from the diminished vascularity. Cases apparently cured should be kept under observation for a year or more to see if any other nodules have grown up from below.

In addition to X-rays I tried all the following cases with at least a dozen seances of high frequency—either by means of the vacuum electrode or the spray. Several writers state that they have found these curative—the results in the patients under my treatment were that the surrounding inflammation was reduced, but the disease itself was unaffected, even in those where I resorted to sparking.

Case 1.—E. P., female, æt. 38. Disease had lasted for 18 years and consisted of a patch, 4 in. by 2 in., on the left cheek. It had previously been treated by cauterising agents and scraping, and when first seen there were 1 or 2 ulcerated patches and numerous nodules interspersed with dense fibrous tissue.

Treatment commenced with short exposures of 6 to 10 minutes in the autumn of 1904, and continued for 3 months, during which time 48 exposures were given at intervals of 3 days, and then a slight reaction appeared. After 4½ months' rest treatment was again begun, as although the disease was much limited several large, deep nodules were still present. Eleven exposures of 15 to 20 minutes were then given during a period of 10 weeks; at the same time the various nodules were spiked with pure carbolic acid.

Digitized by Google

Six weeks' rest was again given, and then treatment was carried on, with intervals, for the next 8 months, at the end of which time no apparent disease was observable. For 18 months nothing was done until recently a small nodule was seen and spiked with carbolic.

The resulting scar is soft and pliable, and there is no telangiectasis in spite of the long course of X-rays, which, when one considers the duration of the disease, is not out of the way.

CASE 2.—Mrs. H., æt. 44. Disease started 2 years previously on the right cheek, then spread to nose, and as it was fungating was diagnosed as epithelioma and partial excision with skin grafting carried out. When seen there were ulcerating patches on the right cheek, the nose was swollen and deformed from the disease and the operation; there were other patches on the left cheek and chin also ulcerated. Treatment was carried on for 8 months, with intervals of a week or two; in all 56 exposures of 5 to 10 minutes' duration to each patch. During the last 2 years only 13 prolonged exposures of 20 minutes have been given; 2 months ago there were no nodules observable. Once she had a purulent reaction, but in spite of that there is only a trifling telangiectasis. The progress has been retarded owing to intercurrent attacks of retro-pharyngeal abscess and strumous conjunctivitis.

In addition to X-rays, painting with carbolic acid, spiking and inunction with ung. hydrarg. oleatis (2½ per cent.) were carried out.

CASE 3.—Mrs. M., æt. 40. The disease had started some years earlier, apparently as a dacrocystitis of the right eye, and had been scraped and excised, but in spite of this it had subsequently extended to the cheek adjoining. When seen there was a large sinus over the lachrymal sac and non-ulcerated lupus affection below the lower eyelid. Thirty-seven exposures of 10 minutes' duration were given at intervals over a period of 9 months—roughly, about every 3 days, with occasional rests of a week or a month. Subsequently after 4 months' rest 20 longer exposures were given in the succeeding 9 months, at the end of which time no evidence of disease was present. A year has elapsed and there is no history of recurrence.

Digitized by Google

CASE 4.—W. M., æt. 28. A patch the size of a florin, not ulcerated, situated on the left cheek. Fifteen exposures of 20 minutes each, spread over a period of 16 months, removed the condition. Six months later there is no recurrence.

CASE 5.—Mrs. H., æt. 60. Disease had lasted for 40 years, the whole face was involved, the scalp was affected at the edges, and one lower eyelid was slightly everted. X-ray treatment had to be given cautiously, different parts being treated at different times—exposures being given thrice weekly for 3 years — and once a purulent reaction lasted for 6 weeks. After this reaction 48 seances with the high-frequency vacuum and spray electrode were administered, but this produced no definite curative effect, and X-ray treatment was again resumed. For 6 months it has been intermitted, and the result so far is that the edge of the scalp, the region of the ears, neck and chin are only affected now, the central part of the face showing some telangiectasis.

CASE 6.—J. L., male, æt. 70. Disease, which involved the whole face, part of the scalp, front of left forearm and back, these last regions showing patches as large as a hand, had lasted 20 years, beginning on the scalp. Treatment has gone on fairly regularly with X-rays thrice weekly for 2½ years. Previously he had the usual other remedies applied with little result. Now the central region of the face is practically well, except for the nose, which, although much improved, is still diseased.

With such an extensive affection naturally one devotes more time to the face, as the patient, even at the above age, is concerned about appearances, and consequently this region has shown most improvement in both cases.

The point in both is how far one should go with X-rays. Some may say I have done enough. Doubtless in old people there is a greater risk of epithelioma, and that is the main cause for anxiety, happily so far avoided in these. The stubborn character of the eruption is, I feel sure, due to the defective soil which has lost the germinal power of youth. Tuberculin is now being used in the last case.

To the outsider the above results may appear unsatisfactory, and necessitating even then a very prolonged treatment. Unsatisfactory to an extent they may be, but when it is recollected that

Digitized by Google

all had previous experience with other remedies, in spite of which the condition slowly spread, this argument fails.

In the days when they first came under my care short exposures were in vogue, but now as good, or even better, results are obtained by the less irksome method of longer and infrequent doses. Only one of these patients can be classified as young, and it is with young people that more gratifying experiences, both as regards cure and time, have been obtained. Lastly, the face is the worst part to be affected by lupus; on the limbs the disease yields more readily to treatment and most readily to X-rays.

Among the tuberculides only two—lupus erythematosus and erythema induratum—have been experimented on. One case of lupus erythematosus of the face improved after a few seances with the high-frequency vacuum electrode, but was subsequently lost sight of.

One case of erythema induratum, affecting the left leg in a girl of 20, was treated with 20 minutes' exposures to the X-rays on two occasions in 6 weeks, at the same time being strapped with emplast. saponis fuscum; at the end of this time it had healed. No recent information has been obtained.

NOTE.—To the Carnegie Trust I express my gratitude for a grant used to aid me in this research.

(*To be continued.*)

RHEUMATOID ARTHRITIS; ITS ETIOLOGY, CLINICAL SYMPTOMS, AND PATHOLOGY.[1]

By KATHERINE S. CLARK, M.D., D.P.H.

Historical.—The names by which rheumatoid arthritis was designated before the disease came to be recognised and differentiated from rheumatism and gout were many and various. A few of these, such as "chronic rheumatism of the joints," "rheumatic gout," "dry arthritis," "nodosity of the joints," show the confusion that existed, and it was not until the year 1800 that its clinical and pathological features took a clearer outline.

[1] An abstract of a thesis presented to the University of Edinburgh for the degree of M.D.

Digitized by Google

Of recent years the terms "rheumatoid arthritis," "osteo-arthritis," and "arthritis deformans," have their different advocates, but, in this country at least, the term which was first applied to the disease, by Garrod, is the one most generally adopted. "Osteo-arthritis" is usually kept for those more chronic forms of the disease which are common in the old, and exhibit more marked osteo-sclerotic changes. "Arthritis deformans," though used very little in this country, is most popular in Germany.

From earliest years it has been known that rheumatoid changes existed in bones, and the first description of the disease was given by Sydenham in 1683, who called it a modification of rheumatism. Later writers were Beauvais, Heberden, and Haygarth, who differentiated it from both gout and rheumatism. In more recent times, Sir A. Garrod, Senator, and Virchow regarded it as a true constitutional disease, and Ord and Spender as purely of reflex nervous origin. In 1896 attention was drawn to the infective phenomena, and various organisms were isolated from joint fluids by Chaufford and Ramond, Bannatyne and Wohlman. More recently Poynton and Payne have secured evidence in favour of the infective nature of at least the acute forms of the disease.

Theories.—Many theories have been advanced to account for rheumatoid arthritis, but most of them have become discredited with a more intimate knowledge of the etiology, symptoms, and course of the disease. At the present time there are three outstanding views as to its origin—the nervous, the bacterial, and the toxic. The supporters of the nervous theory, of whom the chief are Remak, Senator, Ord, and Spender, argue that the joint changes in rheumatoid arthritis are similar to those met with in the chronic spinal anthropathics, such as tabes dorsalis, syringomyelia, ataxic paraplegia, &c., and that in a certain number of cases neuritis has been found around the affected joints. They hold that the extensive muscular atrophy is one of the most important and earliest symptoms, and that it is out of all proportion to the joint lesions, and that the associated skin phenomena are purely nervous in origin.

They note the symmetrical onset and progress of the disease; and Senator holds that a history of the disease being started by violent emotion and grief is evidence of its origin in a central nervous cause. Dr. Ord is of opinion that the disease is reflex to some peripheral irritation which usually has its seat in some

Digitized by Google

uterine or visceral derangement. He believes that the uterine condition causes impulses to be conveyed to the cord, which, being in a state of excessive irritability owing to anæmia, sends impulses by the peripheral nerves to the joints and influences their nutrition.

The most common seat of the visceral derangement is said to be the uterus or ovaries, but the disease occurs in a fair proportion of men (about 1 in 8), and also in women under 18, in whom one would not expect to find uterine or ovarian trouble.

Again, it is contrary to experience to expect as a result of reflex action, even though spread over a period of years, advanced joint changes. The evidence in favour of a nervous theory which has been deduced from the apparent similarity of the joint changes in some spinal anthropathics, such as tabes, cannot carry much weight on closer examination. In these nervous diseases there is a slow, painless effusion into the joints which does not limit their movement; there are various objective nervous phenomena; and with each disease there is associated a definite gross lesion of the cord. So far there is no evidence of constant change in the case of rheumatoid arthritis. The neuritis, which has been found in several cases, is usually secondary to the arthritis, and has only been found in the muscle nerves, and not in those supplying the articulations.

That muscular atrophy, which is a pronounced and an early feature, cannot allow of the supposition that it might be explained by an extension of inflammation along the nerves. The atrophy does not spread, but is general over the muscle, and selection is shown in the extensors being chiefly affected. An atrophic condition of the cells of the anterior cornua has been found in several cases, and Dr. Bannatyne of Bath found degeneration and vacuolation of the pyramidal cells of the anterior horn in one case. These changes were so inextensive, however, that the idea of their being the source of such a widespread disorder could not be held. And again, if this muscular atrophy were due to an affection of the cord, a reaction of degeneration would be obtained, but this is never got.

The Bacterial Theory.—Many hold the theory that this disease is due to a specific organism, and a large amount of work has been done and evidence collected in support of it. One of the most

Digitized by Google

striking features as regards causation is the frequency with which rheumatoid arthritis follows acute infections, as, for example, scarlet fever, influenza, acute rheumatism, dysentery. Frequently this disease itself has an acute onset suggestive of an acute microbic infection. With one type also—that which occurs mostly in children—there is associated a widespread enlargement of glands and swelling of the spleen. Then, again, the fact that there are numerous nerve symptoms, for which no adequate nerve lesion has been found, constitutes to Dr. Bannatyne's mind a strong argument in favour of the organismal theory. He attributes these symptoms to toxines of bacterial origin. He also holds that the course the disease runs of quiet intervals, alternating with periodic exacerbations, accompanied by joint swellings, is very suggestive of an infective process. And, lastly, that the result of treatment for eliminating bacterial products as by guaiacol, points to its origin and adds to the evidence. Professor Baumler of Freiburg points out its polyarticular character, to which he attached importance as showing that the morbid products must be carried by the circulation, and therefore are probably infective.

The evidence in favour of a specific organism with its site in the affected joints, as the cause of this disease, is varied and somewhat contradictory. As early as 1893 Schüller described a bacillus which he took from the joint fluid of a rheumatoid case, and in 1896 Bannatyne and Wohlman isolated a bacillus from an acute case, and got a cultivation on beef broth and agar. Later, Chauffard and Ramond, Von Dungern and Schneider, Poynton and Payne, have described different organisms, but after investigating the bacteriology of many cases, Odery Symes has been led to the conclusion that "in the majority of cases no organisms can be detected either in the blood or in the fluid of joints." In 1903 the joints in 48 cases were aspirated and examined by Crawford and Malim with a negative result. In 1904, at the Johns Hopkins Hospital, Dr. M'Crae was equally unsuccessful in 110 cases. The want of uniformity in the evidence for a bacterial origin of this disease is very striking, and it seems probable that the organism does not as a rule inhabit the joint fluids. But Poynton and Payne found their diplococcus in the synovial membrane of the affected joints, and it is possible that, as in acute rheumatism, the organism may rather lie in the surrounding tissues than in the joint fluid. Post-mortem examinations upon cases of rheumatoid arthritis

Digitized by Google

being rare, the few opportunities of getting sections of joints for bacterial and microscopic examination may explain the want of success which has attended these investigations.

The toxæmic theory suggests a union between the neural and infective, as individually neither of these can satisfactorily explain the clinical phenomena. It assumes an initial microbic infection, the site being one of the great tracts, or some septic focus, thence the toxines are absorbed, involving joints and nervous system. The chief exponent of this theory is Llewellyn Jones, who draws attention to the similarity of the clinical phenomena in this disease and the so-called chronic toxæmias such as exophthalmic goitre, Raynaud's disease, tetany, migraine, &c. Rheumatoid arthritis is frequently found associated with one or other of these diseases, and in the first three the incidence is heaviest upon women; and as regards etiology, the proneness of women to gastro-intestinal disturbance in connection with menstruation, pregnancy, and the menopause is to be reckoned. The clinical features in common are vaso-motor phenomena, motor and muscular spasms and paresis, sensory pains and paræsthesia, increased tendon reflexes, skin changes, and periarticular swelling of joints which comes and goes. Jones thinks that the fact of there being prodromal symptoms in rheumatoid forms an important argument in favour of the disease being of the nature of a cerebro-spinal toxæmia. He is of opinion that the first stage, with its fluctuating temperature, rapid wasting and vaso-motor phenomena, &c., is the true rheumatoid, that the features of the later stage are simply secondary to changes induced in the cerebro-spinal axis by the previous vascular disturbances with segmental failure in nutrition of the nerve centres.

Another view as to the source of the toxin is that it may be produced in the intestinal canal, especially in the duodenum, as the result of fermentative changes. Absorption may take place, and exert a poisonous influence on the cord, and through it on the joints and other tissues. In support of this theory is the effect of the administration of certain antiseptics, such as guaiacol carbonate, in certain cases, especially those which are accompanied by a fermentative dyspepsia. Improvement also sometimes follows washing out of the colon, and it is possible that these measures act by keeping down an excessive growth of bacteria in stomach and intestines.

Digitized by Google

During the last few years I have had opportunities of observing a considerable number of cases of this condition in different stages of the disease. It is unnecessary, however, to describe in detail more than the following three:—

Clinical.—CASE A.—A married woman of 57 had a history of pain in and deformity of joints of 26 years' duration. Both parents died of rheumatism. She married at 27 and had one child. She had leucorrhœa for several years after its birth, and she nursed the child for 18 months; at this time she had some mental worry and grief. During this period the right knee took an aching pain and afterwards swelled. Right ankle, left knee, and ankle became painful and swollen, so that she could only move about with the help of sticks. For 20 years these were the only joints affected; then the jaw became stiff, and for some months she had difficulty in feeding herself. In quick succession the cervical spine, small joints of hands, wrists, elbows, and shoulders were involved, and for the last 3 years she was bedridden.

On examination, she was unable to stand or walk owing to loss of power in the legs and stiffness and flexion at knee-joints, which showed ankylosis and lipping of articular surfaces. Ankles showed bogginess, with thickening of capsules and increase of joint fluid; sweating of soles; marked atrophy of leg and thigh muscles; limitation of movements at hips. Upper limbs were flexed at the elbow to an obtuse angle, the hands in position of ulnar flexion, and every joint showing marked rheumatoid changes in enlargement of the whole joint, with hyper-extension of some, and with looseness of the joint and grating and flexion of others, marked atrophy of hand and arm muscles, sweating of palms, freckling over the dorsum of enlarged joints, and cyanosis of ends of fingers. The wrists were boggy and thickened, elbows showed increase of fluid and fixation of joints, shoulders a degree of creaking accompanied by pain.

Pulse 96, small, regular; dyspepsia marked. Liver slightly enlarged; bowels regular; a trace of albumen was always present in urine, with some hyaline casts. Under observation for 6 weeks, she improved for the first fortnight, then diarrhœa began and continued intermittently with vomiting until death.

The sex and age of onset of the disease (27) are typical, and the three most prominent features in connection with the causation

Digitized by Google

in Odery Symes' opinion are here illustrated, for (1) "she inherited the rheumatic diathesis" from both parents; (2) there was present at the onset of illness "a condition of malnutrition and debility"; (3) "the toxic focus" undoubtedly was found in some catarrhal condition of the genito-urinary tract with persistent leucorrhœa.

The case is characteristic in its prolonged course and in its steady progress towards complete crippling.

It is atypical in the invasion first of one of the larger joints, but typical in its symmetrical and bilateral spread from joint to joint.

A lighting up of the disease at the menopause is significant, as at that time marked changes are going on in the metabolism of the tissues, changes which in themselves are of a degenerative nature when the whole system is in a depressed condition and ready to develop unhealthy tendencies. At this stage the disease had taken on a more active course and progressed towards her permanently crippled condition.

It was noteworthy that her dyspeptic attacks had been more frequent since the menopause, and an additional focus of infection may have been found in the catarrhal state of the alimentary tract.

Post-mortem Appearances.—Pancreas.—The epithelial changes were extensive, very little of normal epithelial tissue being left, the glandular cells showing disintegration with granular protoplasm, and the nuclei either almost obscured or altogether lost.

The islands of Langerhans showed loss of epithelial cells, these being replaced in parts by fibrous tissue. The ducts were fewer in number than normal, the walls hypertrophied and fibrous, and the lining epithelial catarrhal.

Interstitial Changes.—There was great increase of fibrous tissue between the lobes, lobules and cells. The interlobular spaces were widened from œdema, and showed new formation of many small vessels.

Vascular Changes.—In larger arteries increase in thickness of walls, this being due chiefly to thickening of tunica intima. An organised thrombus, through which channels were formed, was seen in one of the larger arteries. On the surface of the organ a hæmorrhage of fairly recent date had taken place.

Skin.—The rete Malpighi was extremely thin, being represented in places by a single layer of cells covered by a thin

Digitized by Google

stratum corneum; corium flattened, downgrowths of epithelium few and irregular. Near the surface were pockets with lining, continuous with S. corneum, and containing a structureless stratified tissue. There was an almost total absence of normal hair follicles. Sub-epithelial tissue was composed of very dense white fibrous tissue, in which, in the deeper layers, hyaline degeneration had taken place.

The medium-sized arteries showed a very extensive degree of change, the nature of which was chiefly an endarteritis. T. intima was greatly thickened, fibrous formation in the media, splitting up and separating muscle fibres, and causing thickening of the coat. In the adventitia fibrous thickening was present, but to a less extent. The arterioles were also thickened—the change being chiefly in the T. adventitia.

Kidney in its tubules showed the cells swollen and cloudy, with hyaline casts present. Some of the glomerati were fibrous, others were entirely fibrous and showed hyaline change. Thickening of the walls of the larger arteries was present, the coats chiefly affected being the T. intima and media.

Spleen showed fibrous thickening of capsule and trabeculæ; marked thickening was present in all the coats of the larger arteries, and in the central arteries of the malpighian corpuscle, the thickening being of a hyaline degeneration. Heart and lungs showed distinct thickening of vessels which was hyaline in character, the T. intima showing the greatest degree of change.

Case B.—A girl of 24 was admitted to hospital suffering from "weakness and swollen joints." She was somewhat deficient mentally, and also a little deaf, so that it was difficult to get any definite history of her illness. Anæmia was marked, and deep pigmentation present round the eyes; tongue heavily furred; breath of a peculiarly fœtid odour; gums being pale and fumigating; teeth blackened and half stumps; bowels constipated. The small joints of both hands showed fusiform enlargement with grating on movement, atrophy of small muscles, and sweating of palms; systolic murmur present over base of heart. Further history in the ward showed the bowels regulated, tongue cleaned, but the breath remained foul. Some decayed stumps of teeth in front were extracted, but the molars could not be reached owing

Digitized by Google

to pain and stiffness in tempero-maxillary joints. Improvement continued for 2 or 3 months, when an exacerbation occurred with acute pain in first one knee-joint and then the other, with effusion. Pain and swelling followed of elbows, wrists, and later of ankles, so that she was completely helpless till the close of illness, about 9 months later.

Condition of Bones and Joints.—The hands at this stage showed —(1) Ulnar deviation, most marked in the right; (2) displacement at the metacarpo-phalangeal joints, and also, to a less extent, at wrists; (3) broadening of the bases of long bones with heaping up of cartilages at the edges of joints; (4) matting together of carpus with loss of joint outline; (5) dislocations at metacarpo-phalangeal joints and at terminal phalangeal joints; (6) ankylosis present at terminal phalangeal joints which also showed osteophytic outgrowths.

Every joint in the body, almost without exception, was affected more or less with disease, so that she was unable alone to turn in bed, feed herself, or stand unaided. The heaviest incidence had fallen on wrists and hands, ankles and feet; but the larger joints—elbows and shoulders, knees and hips—were also invaded and gave the signs of disorganisation. The cervical vertebræ and both tempero-maxillary joints were painful and stiff. Pulse 88, bowels constipated. A trace of albumen in urine, but no casts found. Treatment was directed to improving the mouth condition and to correcting constipation, with local applications for pain in joints. Temperature was rising 1 degree at night. Both ears began to discharge, and perforations of both tympani were found. She lost weight. About 3 weeks before death, what was apparently a normal menstruation period occurred, though there was no history of a previous menstruation. Two weeks before death, for the first time, a dull note was found on percussion over the right apex, with bronchial breathing. There was no cough or sputum, but a rising temperature. There was a rapid extension of the physical signs over both lungs, with increasing and rapid emaciation. She was quite free from joint pain, and the periarticular swelling had largely disappeared before death.

The case was a typical one of rheumatoid arthritis, occurring in a young girl who had evidently been subjected to considerable hardship and consequent malnutrition. When first seen the disease had followed a normal course, attacking bilaterally the

Digitized by Google

smaller joints of the hands. The focus of infection was probably in the mouth condition, which was fœtid to a degree, from unhealthy mucous membrane and carious teeth. Treatment directed to the alimentary tract resulted in some improvement; but as it was found impossible to extract all the carious teeth, owing to ankylosis of the jaw, and this oral sepsis continued, an acute exacerbation of arthritis set in, which, in spite of all treatment, made steady progress. Deafness, which was present on admission, and had been ascribed to ankylosis of the ossicles, was found to be due to middle-ear disease. Following the otorrhœa, which was no doubt of tuberculous origin, was the acute lung complication, which rapidly became a generalised tuberculosis. A point of note was the total absence of menstruation during the 13 months in which the patient had been under observation (no previous history of the menses could be obtained), and the occurrence of a fairly normal menstruation, whilst in a debilitated condition, a month before death. Histological examination shows the ovary to be of interest.

This case is a contrast to the previous one in its rapid course, and in the acute onset of an intercurrent disease, which ended in the death of the patient.

Post-mortem Appearances.—Skin.—The squamous epithelium was remarkably thin, consisting at parts of only two layers of cells. The papillæ were flattened all along the surface, and sometimes processes of epithelium projected for a considerable distance downwards, the deepest cells being pigmented. Some of the pockets appeared to be cut off from the surface, and contained a degenerated hair follicle. The sub-epithelial tissue was of very dense white fibrous tissue, in which hyaline degeneration had taken place, and in which atrophying glands and nerve fibres were seen.

The medium-sized arteries showed a very extensive degree of change of the nature of a chronic arteritis. All the coats showed marked thickening, especially of the T. intima, which was thrown into folds, producing an irregular triangular lumen. The smaller arteries were also thickened, chiefly in T. media and adventitia, and this thickening affected also the T. adventitia of the veins.

Pancreas.—The principal change was in the walls of the ducts, both small and large, which showed a considerable degree of

Digitized by Google

hypertrophy. Thickening was also present in the walls of the larger arteries.

Ovary.—There was a total absence of surface epithelium. In the organ, at one end, there were a few Graafian follicles, some of which appeared comparatively normal, but the greater part of the organ was composed of cellular tissue, mostly fibrous, in which were embedded numerous blood-vessels and tube-like spaces, some of which were lined by cubical epithelium. Some of the smaller vessels had a distinct thickened T. intima, so that the changes correspond to those found in other organs.

Kidney.—The epithelium of the tubules showed cloudy swelling. Some thickening was present in Bowman's capsule around a few glomerati, which also showed in parts hyaline degeneration. Thickening was present in the T. intima and media of some of the medium-sized arteries.

Spleen.—The chief change was shown in the central artery of the Malpighian body, which was much thickened and had undergone hyaline degeneration (section of this organ, as well as the others, stained with methyl-violet excluded waxy disease).

Liver.—Thickening of a fibrous nature was present around the bile duct and hepatic artery. Round-celled infiltration was noted in some portal spaces.

Lung showed miliary tubercle, the nodules not having reached an advanced caseating stage.

Heart.—There was marked capillary congestion, some increase of pigmentation of muscle fibre, and a loss of striation of the fibres chiefly under the endocardium.

CASE C. is that of a man of 65, who was an inmate of Craigleith Poorhouse for 8 years. He had a family history of rheumatism, but he had good health until 2 years after admission. Then dyspeptic symptoms became troublesome, accompanied by persistent constipation. Following this, he took burning pains down both thighs, pains which were always worse at night, and made his walking stiff and difficult. For 4 years these were the only symptoms. Then the left wrist swelled, followed by the right metacarpo-phalangeal joints of first and second fingers and right wrist. There was no invasion of the larger joints.

When examined, the hands showed a typical rheumatoid lesion. Right hand in ulnar flexion, wrist showing bogginess, thickening of

Digitized by Google

capsule, grating on movement. Atrophy marked in small muscles of hands. Enlargement of the small joints, in which grating was felt; freckling over the dorsum, and sweating of palms. Left hand similar. Atrophy of muscles of arms, with grating of elbows and shoulders.

Changes in bones and joints showed the ulnar displacement of both hands most marked in the right, and taking place both at the wrist and the metacarpo-phalangeal joints; (2) broadening of the bases of long bones, with denser bone tissue; (3) matting of carpus with loss of joint outline. (4) Almost complete absorption of first and second metacarpo-phalangeal articular surfaces; (5) dislocation of metacarpo-phalangeal joints of thumb and little finger. (6) Osteophytes at distal phalanges.

The lower limbs showed atrophy of muscle, especially of the extensors of thighs, and sweating was always present in soles of feet. Knee-jerks much increased on both sides. Pulse 72, regular in time and force. A degree of bronchitis present in chest. No albumen in urine.

Further history in hospital showed a continuous normal temperature, and treatment for dyspepsia and constipation resulted in relief of the joints pains, which had been very acute, and a diminution in periarticular swelling. Improvement continued for several weeks, when there was a return of pain over lower cervical vertebra and down inner side of thighs. Knees swelled, and he was found to be losing weight. His further history was one of gradually increasing helplessness, owing to swelling and pain of the larger joints and extreme atrophy of muscle. Constipation had returned. He constantly complained of "burning" pains in the joints, which were always worse at night. The gradually increasing asthenia ended in death 9 months after he had come under observation and treatment.

In this case the age and sex are to be noted. A man at 57 is an unusual case of rheumatoid disease, and in addition to its late development the course of the disease was a comparatively short one. Four years of a mild and stationary invasion, and 3 years during which there was a more acute and progressive phase, resulting in crippling, the patient becoming bedridden, and followed by death. In his case is the history of an arthritic diathesis, and a very clear one of gastro-intestinal disturbance accompanying the first pains which, burning in nature, were

Digitized by Google

marked especially down the thighs during all the course of his illness and were very unresponsive to different forms of treatment.

The dyspeptic symptoms were well marked, persistent and troublesome, and constipation was a symptom which was present from the beginning of his illness. This is very suggestive, as with a poorhouse diet, the principal parts of which are porridge and broth with vegetables, it is comparatively rare to find constipation, diarrhœa being a much more frequent complaint. The effects of treatment directed towards the alimentary tract were marked, the joint-pains being relieved and the swelling disappearing.

It was thought that the focus of infection was removed, and that absorption of toxines was arrested, but there was an exacerbation with involvment of the cervical spine, and a bilateral invasion of the larger joints with a return of constipation.

Post-mortem Appearances. — *Pancreas.* — Interstitial changes. Some of the lobules showed a marked increase of fibrous tissue, the strands passing in between the lobes and penetrating lobules, enveloping groups of cells. The fibrous changes were more marked around the islands of Langerhans and round the ducts. The larger ducts showed marked thickening of hyaline connective tissue, and their epithelium was proliferating and catarrhal. The smaller ducts were also thickened.

Vascular Changes.—There was a degree of thickening in the larger vessels, the change affecting the T. intima chiefly. There was increased fibrous tissue in the media, which showed hyaline degeneration. In T. media and adventitia the smaller vessels were somewhat thickened. In one vessel an old organised thrombus was seen.

Skin.—Atrophy of all the layers of surface epithelium was marked, and on the surface were pockets similar to those seen in the other two sections of skin. Underneath the corium was a dense layer of fibrous tissue in which, in its deeper layers, the fibres appeared swollen and hyaline. Nerve bundles were numerous and prominent, the perineurium being somewhat thickened. The medium-sized arteries were much thickened, the change taking place in all the coats, but affecting chiefly the T. intima and media. The smaller vessels were also thickened.

Heart showed patches of fibroid myocarditis, the newly-formed tissue being cellular.

Liver had a thickened capsule, with extensions throughout

Digitized by Google

and passing through the liver tissue. In some of the larger tracts there was a distinct increase of connective tissue, especially in relation to the larger bile-ducts. This fibrous tissue was arranged concentrically round the duct, and to a less extent involved the vessels in the tract.

Spleen.—Thickening of capsule and trabeculæ. Central arteries of Malpighian bodies in every case showed hyaline change.

Kidney.—The cells of the tubules showed cloudy swelling. Some of the tubules were atrophied in parts in the neighbourhood of patches of fibrosis. Thickening of Bowman's capsule was present which was hyaline in character, and the glomerati at parts were entirely hyaline. The larger vessels showed much thickened walls, the thickening being chiefly of the intima, and hyaline in character. Some localised increase in connective tissue in the neighbourhood of vessels was noted. Staining with methyl-violet excluded waxy degeneration, and a section stained with resorcin fuchsin showed the elastic tissue increased in amount and split up.

Conclusions.—From a study of these and of the other cases of my series certain conclusions may be drawn in support of the toxæmic theory of the cause of rheumatoid arthritis.

That rheumatoid arthritis owes its origin to some lesion of the nervous system cannot be held, in the light of the fact that pathological evidence in favour of this theory has not been obtained.

The bacterial theory—by which one means that a specific organism with its nidus in the affected joints is the cause of the disease—is improbable because no specific organism, present in all cases, has been discovered, and that, although an immense amount of experimental work has been done by many observers, there has been no uniformity in their results. It therefore seems clear that the joint lesions are not the direct result of specific organisms contained in the joints.

But it is very probable that the disease is of organismal origin, the organisms having their seat or focus distant from the joints in some tract or organ, where, under suitable conditions, they evolve toxines, which being thrown into the blood-stream get carried far and wide throughout the body. The clinical evidence in favour of rheumatoid disease being a chronic toxæmia is very suggestive,

Digitized by Google

and in reviewing the clinical records presented, it has seemed to me that a marked feature is the invariable disturbance of the alimentary tract. Gastric crises with no dietetic or external cause have been noted, and point to a toxæmic origin. Febrile attacks are in the same category, and may occur alone or accompanying alimentary disturbance. Constipation is very common, alternating with persistent and troublesome diarrhœa.

A very strong point in favour of the disease being a chronic toxæmia is the relapses and exacerbations which one finds in most cases. Periods of quiescence, when no doubt betterment is sometimes attributed to successful treatment, are followed by a fresh outbreak with increased disability of joints. Again a quiet period comes, and again an acute attack, but all the time the disease is progressing.

An increased pulse rate, without any organic cardiac disease, is a well-recognised symptom, and is present in a majority of cases. It points to a poisoning of cardiac nerves and their centres.

The anæmia of chronic rheumatoid arthritis is of a secondary nature. Atrophy of muscle, present very extensively, is a symptom which is most suggestive of a toxic absorption. Selection is shown by a special affection of the extensor groups and the interossei; and occasionally one muscle, or one set of muscles, may be picked out. One compares this condition with alcohol poisoning where the extensors of the legs are affected, or lead poisoning where the extensors of arm and hand are picked out, or diphtheria toxin where the eye muscles are specially selected.

Increase of reflexes, which I have found an almost invariable symptom, points to some irritative cause.

As regards the joints, the bilateral character of the invasion, and the progressive involvement of joints, point to the blood-stream as the actual means of transit of the poison, wherever the site or focus of infection, bowel, uterus, or elsewhere, may happen to be. The beneficial effects of washing out of stomach and colon, and the action of certain so-called intestinal antiseptics on the joint condition is some evidence in favour of the toxin being generated in certain cases in the intestinal canal.

Pathological Summary.—In the course of a review of the literature on this subject, one recognised that the joint lesions

Digitized by Google

in chronic rheumatoid arthritis have been very fully examined and described, both as to naked eye and microscopic characters, and a large amount of bacteriological work has also been done upon these, with, generally, a negative result. So little, however, has been published with regard to the organic changes occurring simultaneously throughout the rest of the body, that I considered it would be interesting and profitable to make the observations recorded.

1. *Spleen.*—The organs in which I have found definite changes are the spleen, liver, kidney, pancreas, skin, &c. In the spleen, in all three cases, the most prominent histological change was found in thickening of the walls of the central artery of the Malpighian body, this thickening being of the nature of a hyaline degeneration. The capsule and trabeculæ are also more or less thickened with dilatation of the sinuses of the pulp and some thickening of walls.

2. *Liver.*—In the liver, in two of the cases, there is increased connective tissue in the portal tract with thickening of the walls of ducts and vessels. This fibrosis is very advanced in Case C.

3. *Kidney.*—The principal changes in the kidney are apparently primarily arterial, and the new tissue has undergone hyaline degeneration. In some part, in all three cases, the glomerulus is markedly hyaline. Bowman's capsule frequently showed fibrous thickening, and throughout the organs, particularly along the vessels, were localised patches of fibrous connective tissue.

Pancreas.—In the pancreas the pathological changes are even more marked, increase of connective tissue throughout the organ being very extensive. There is degeneration of the parenchyma, and hyaline thickening of vessels and ducts, with a proliferation of their lining epithelium.

5. *Skin.*—In the skin sections, all three uniformly show atrophy of epithelium, glands, and hair follicles, increase of fibrous tissue in the cutis vera, with hyaline degeneration in the deeper layers.

6. *Ovary.*—The ovary of Case A, being of a woman of 57, shows little abnormality, except in the greatly thickened vessels, the coats of which are markedly hyaline. The ovary of Case B, a girl of 24, is pathological in the almost total absence of germinal epithelium and follicles, in its extensive fibrosis, and in the thickened hyaline vessels.

Digitized by Google

7. *Stomach.*—The hollow organs, stomach and bladder, were to the naked eye markedly thickened, this change being principally in the muscular coat.

Amongst these pathological changes, perhaps the most remarkable are those described in connection with the skin, changes which are evidently widespread. It is difficult to account for these otherwise than on the ground of an apparently specific neuropathic origin, and probably, in addition, they may partly result directly from the arterial changes. These arterial changes, being so widespread throughout the body, can only be explained by the circulation of some chronic irritant in the blood-stream, which, in its course, involves joints as well as organs. I am therefore of opinion that the joint changes are merely symptomatic and that they are only part of a general chronic toxæmia.

REFERENCES.

1. Spender. "Osteo Arthritis." 1888.
2. Poynton and Payne. *Brit. Med. Journ.* Vol. ii. 1902; and *Trans. Pathol. Soc.* Vol. liii. part ii. 1902.
3. Folli. *Il Policlinico.* December 1894.
4. Bannatyne. "Rheumatoid Arthritis." 1906.
5. Odery Symes. "The Rheumatic Diseases."
6. Llewelyn Jones. *Edin. Med. Journ.* Part i., 1903; and *Brit. Med. Journ.* 1902.
7. Von Dungern and Schneider. *Munich Med. Woch.* 1898.

Births and Deaths in Eight of the Principal Towns of Scotland during December 1907.

DURING the month of December 1907 there were registered in the towns of Glasgow, Edinburgh, Dundee, Aberdeen, Paisley, Leith, Greenock and Perth the births of 3909 living children, of whom 1966 were male and 1943 female. These births are 254 more than those registered in November, and 49 more than those registered in December of last year. The births registered during the month are equivalent to an annual birth-rate of 25·4 per thousand of the estimated population of the eight towns, a rate which is 0·8 higher than that of November, but is the same as the birth-rate of December of last year. The birth-rate of the month ranged from 30·6 in Greenock to 20·0 in Edinburgh. In Leith it was 28·7; in Glasgow 26·9; in Paisley 26·8; in Dundee 25·6; in Aberdeen 25·0; and in Perth 21·3.

Digitized by Google

Of the 3909 births, 270, or 6·9 per cent., were illegitimate, an illegitimate rate which is 0·2 higher than that of November, but 0·5 lower than that of December of last year. The illegitimate rate ranged from 11·7 in Dundee to 3·4 in Leith. In Aberdeen it was 9·4; in Edinburgh 7·0; in Glasgow 6·4; in Perth 6·3; in Paisley 4·5; and in Greenock 4·3.

Deaths registered in these towns during the month numbered 3096, of which 1557 were of males and 1539 of females. These deaths are 590 more than those registered in November, and 200 more than those registered in December of last year. The equivalent annual death-rate was 20·1 per thousand. It is 3·3 higher than that of November, and 1·0 higher than that of December of last year. The death-rate of the month ranged from 27·3 in Dundee to 14·4 in Aberdeen. In Perth it was 24·3; in Greenock 24·1; in Leith 22·1; in Glasgow 20·4; in Paisley 18·5; and in Edinburgh 17·6. In each of the 8 towns the death-rate was higher than what it was in November.

Of the 3096 deaths registered during the month, 1239, or 40·0 per cent., were of children of less than 5 years old; and 739, or 23·9 per cent., were of persons of over 60. The former are 286 more than in November, and 262 more than in December of last year; the latter are 142 more than in November, but 69 fewer than in December of last year.

Deaths of children of less than 1 year old numbered 689. They are 141 more than in November, and 88 more than in December of last year. The infantile mortality-rate of the month is 165 per thousand births, a rate which is 29 higher than that of November, and 21 higher than that of December of last year. The infantile mortality-rate of the month ranged from 232 in Dundee to 138 in Aberdeen. In Perth it was 231; in Greenock 207; in Leith 187; in Edinburgh 183; in Paisley 160; and in Glasgow 145. In Glasgow this rate was lower in this month than in November, but in the other 7 towns it was higher.

Deaths from the principal epidemic diseases numbered 508; they are 186 more than in November, and 282 more than in December of last year. The equivalent annual death-rate from these causes is 3·3 per thousand, a rate which is 1·1 higher than that of November, and 1·8 higher than that of December of last year. This rate ranged from 6·7 in Dundee to 0·9 in Edinburgh. In Perth it was 6·1; in Greenock 5·1; in Glasgow 3·8; in Leith 3·4; in Paisley 2·9; and in Aberdeen 1·4.

One death occurred from small-pox in Leith. Deaths from measles numbered 280; they are 133 more than in November, and 248 more than in December of last year. Of them 182 were registered in Glasgow, 60 in Dundee, and 22 in Greenock. Deaths from scarlet fever numbered 18; from diphtheria 41, of which 17 were in Glasgow

Digitized by Google

and 8 in Paisley; deaths from enteric fever numbered 13; from diarrhœas and dysentery 38; from whooping-cough 97, of which 32 were in Glasgow, and 15 each in Leith and Perth; and deaths from cerebro-spinal meningitis numbered 20, of which 10 were in Glasgow, 4 in Leith, 3 in Edinburgh, 2 in Paisley, and 1 in Aberdeen. The high death-rate from these causes in Perth was largely due to whooping-cough, those in Dundee and Greenock to measles.

Deaths during the month from influenza numbered 11; from puerperal septic conditions 4; from malignant disease 151, of which 79 were ascribed to carcinoma, 9 to sarcoma, and 63 to cancer not otherwise specified. Deaths from heart disease numbered 269; from apoplexies 146; from premature birth debility 99; and from alcoholism 6.

Deaths from pneumonia numbered 371, and constituted 12·0 per cent. of the total deaths of the month; they are 91 more than in November, and 23 more than in December of last year. Deaths from bronchitis numbered 299; they are 99 more than in November, and 56 more than in December of last year; they constituted 9·7 per cent. of the total deaths of the month.

Deaths from tuberculous diseases numbered 333, and constituted 10·8 per cent. of the total deaths of the month; they are 42 more than in November, but 39 fewer than in December of last year.

Deaths ascribed to violent causes numbered 112. Of them 4 were suicidal, 2 being by hanging, and 1 each by drowning and poisoning by prussic acid.

Of the persons whose deaths were registered during the month, 3 males and 10 females were aged 90 years and over. The oldest of them were a minister of the United Free Church, a retired labourer, and a spinster, all aged 96.

Meetings of Societies.

Edinburgh Medico-Chirurgical Society.

THE fourth ordinary meeting was held on 15th January, Dr. Ritchie (President) in the chair.

Mr. Caird showed a specimen of carcinoma of the stomach removed by Billroth's second method.

Dr. Fleming showed a man suffering from spastic diplegia of infantile origin. Symptoms had not altered during the last 20 years. There was no mental impairment.

Digitized by Google

Mr. Dowden showed a patient after operation for perforated gastric ulcer, situated near the duodenum. He had excised the ulcer by an elliptical incision extending into the duodenum, and closed the wound by bringing the opposite ends of the ellipse together. The case showed an excellent result following early complete suture of the abdominal wall.

Mr. Caird showed a patient after removal of half the tongue under cocaine and adrenalin. No gag was used, and the operation was done with scissors. The wound healed more rapidly, and the patient was more comfortable than was usual after similar operations under general anæsthesia. At a later date the glands in the anterior triangle were removed. Patient had lately shown an enlargement of the sub-maxillary gland, which was at first merely cirrhotic, but later it had become more indurated, and would be excised.

Mr. Caird also showed a patient with recurrence in the bowel and liver 4 years after enterectomy for malignant stricture of the colon.

Dr. Edwin Bramwell showed a little boy suffering from weakness of sterno-mastoids and trapezius muscles with eye symptoms, probably the result of poliencephalo-myelitis.

Mr. Alexis Thomson showed a case after osteo-plastic amputation through the middle of the leg, in which a portion of the tibia was retained in the anterior flap, and brought into contact with the sawn section. He also showed a boy, aged 17, with deformity of the lower limbs, and spastic paralysis following Pott's disease, in which an attempt had been made on the one side to restore the weight-bearing capacity of the limb by osteotomy of the femur and transplantation of the tendons of the semi-membranosus and biceps into the patella. The result was, so far, encouraging.

Dr. Chalmers Watson showed 2 cases of chronic pancreatitis, and demonstrated Cammidge's pancreatic reaction in the urine.

Mr. W. J. Stuart demonstrated the pneumatic sigmoidoscope.

Mr. J. W. Dowden read the paper on appendicitis, which appears on page 103.

Mr. Cotterill said that opinions as to the treatment of appendicitis varied very greatly, the extreme course, on one side, being never to operate at all, and, on the other, to operate in every case. He thought it was madness not to have the appendix removed after one acute attack. Interval operations were attended by a mortality of less than 1 per cent. The most difficult question was when to operate in an acute case. If he could operate on all cases within the first 20 hours he would do so. He would not operate on cases from the third to the tenth day if operation could be avoided. He thought prognosis could be judged of with sufficient accuracy to make immediate operation in

Digitized by Google

all cases unnecessary. Each case had to be judged on its merits, and it might be advisable to operate on country cases in circumstances which would justify waiting were the patient in a surgical hospital or home.

Dr. MacGillivray thought that when a case showed improvement after 24 hours it was better to delay operation. If no improvement occurred in 48 hours he would recommend operation. After one severe attack the appendix should be removed, but if symptoms had entirely disappeared he would not be disposed to advocate operation very strongly unless the patient were likely to be in places where surgical aid would not be available.

Dr. Affleck said he had never been converted to the view that appendicitis was a disease for the surgeons alone. Nature cured a great many cases. There was no uniformity of symptoms, and he had seen many appendices removed that proved to be healthy. Every case was to be judged on its merits, and it was a mistake to lay down too strict surgical rules regarding such a difficult disease.

Mr. Caird said it was only a few years since he had been the first to bring a case of appendicitis successfully operated upon before the Society. He thought the low mortality in interval operations was surprising, especially as some of them were of extreme difficulty. He had recently isolated B. coli and a diphtheroid bacillus from among the adhesions in a case operated on years after an attack. He thought Mr. Dowden's paper a little too pessimistic. The chances of recovery were increasing, and among the reasons for a better prognosis were the larger incisions and drainage of the pouch of Douglas.

Mr. Stiles thought the mode of onset of the attack was an important factor in determining operation, and that the fulminating could be distinguished from the mild cases. He would operate on all severe cases in the first 24 hours, but after that the question was difficult. He had never regretted waiting, but his rule was to operate when in doubt. He thought that a factor in favour of operation in a severe case was the length of time the patient would be ill, in addition to the time an interval operation would lay up the patient. He agreed with Mr. Caird that improved technique had greatly favoured prognosis. He ascribed the improved prognosis to the use of ether instead of chloroform, thus avoiding acetonuria, the lessened interference with the abdomen and the diminished practice of washing it out, to abdominal drainage, allowing the patient to sit up, and the use of rectal instead of intravenous injections of saline solution. He called attention to the presence of a fine crepitation in the subcutaneous tissue over the region of the appendix as a useful physical sign.

Mr. Alexis Thomson was inclined to agree with Mr. Dowden's view

Digitized by Google

that it was often impossible to predict the course of a case of appendicitis. This was especially true if the appendix were abnormally situated, and a retro-cæcal appendicitis might readily pass beyond the ken of diagnosis. There were certain deaths in the practice of all surgeons, and if these deaths were to be avoided operation should be carried out in the first 24 hours.

Dr. M'Callum said that chloroform was dangerous in acute infective conditions, especially in young subjects. Acetonuria did not occur after ether anæsthesia.

Dr. W. T. Ritchie doubted whether the anæsthetic accounted for the greater post-operative mortality in young subjects. A post-mortem examination showed some cases of alleged chloroform poisoning to be cases of septic infection.

Dr. Gulland said it was by no means necessary to operate on a patient after one acute attack. Only a small proportion of cases had a recurrence, and the likelihood of recurrence could be diminished by suitable treatment. He would not refer to the blood condition further than to emphasise its importance, and to say that surgeons continued to ignore it.

The President said that he would be prepared to accept a case of appendicitis for life insurance six months after operation. He thought a certain amount of diversity of opinion arose from the fact that physicians saw more mild cases, while the surgeons saw the severe ones. He would not press for operation if all symptoms had gone in a month or six weeks after an attack, but he would do so after a second attack.

Dr. R. A. Fleming gave a lantern demonstration on changes in the optic nerve in a series of cases of intra-cranial tumour. He showed that neuroglial hypertrophy in the optic nerves of cases of intra-cranial tumour was much greater than where the hypertrophy was the result of simple local irritation. The toxic theory of neuroglial hypertrophy in brain tumour was probably correct.

Edinburgh Obstetrical Society.

THE third meeting of the sixty-ninth session was held on Wednesday, 8th January, at 8.30. The President, Professor Stephenson, in the chair.

After the reading of the minutes of last meeting and other private business the following specimens were exhibited :—

1. Dr. Freeland Barbour showed telangiectatic fibroid. Microscopic preparations were shown which demonstrated that the spaces had a

Digitized by Google

definite lining membrane, and that it was not merely a fibroid with blood extravasations.

2. Dr. Brewis showed (*a*) two examples of endothelioma of the ovary removed from the same patient. (*b*) Uterus tubes and ovaries removed by vaginal hysterectomy for endothelioma of the cervix. (*c*) Malignant cystic tumour of the ovary; the patient's other ovary had been the seat of a solid malignant tumour. (*d*) Uterus removed for malignant adenoma, together with cystic ovarian tumour. (*e*) Uterus —the seat of fibroids—and large intra-ligamentary ovarian tumour removed from the same patient. (*f*) Malignant uterus and ovarian tumour removed from the same patient. (*g*) Large solid ovarian dermoid, simulating a fibroid tumour and causing retention of urine. (*h*) Examples of hydrosalpinx and pyosalpinx.

3. Dr. R. P. Ranken Lyle exhibited (*a*) uterus removed by pan-hysterectomy for malignant disease of the cervix obstructing labour at term. Cæsarean section was performed and a healthy living child delivered. In performing the hysterectomy the bladder, which was adherent to the cervix, was torn. The tear was carefully sutured and the patient left hospital with perfect urinary control. Six weeks later she returned with a vesico-vaginal fistula; on examination there were found two hard nodules in the cicatrix of the vaginal vault. The patient refused to submit to any further treatment. (*b*) The gum elastic end of a vaginal syringe 6 inches long, which had been retained in the bladder for 7 months. (*c*) Ectopic gestation. (*d*) Photograph of a tripodic ischiopagus double monster. The thorax, upper extremities and head of each were well developed. The monster presented by the head, the arms and legs were folded on the trunk, then the second pair of arms and second head were delivered. The monster survived birth for between 3 and 4 days. One fœtus died fully half-an-hour before the other.

4. Dr. Carmichael showed a uterus removed by Wertheim's Operation for cancer of the cervix. The patient died suddenly 7 days after operation.

After some discussion on the specimens exhibited Sir Halliday Croom read to the Society his paper on "Hyperemesis Gravidarum, with Notes on a Fatal Case." The patient, æt. 33, was pregnant for the first time; she menstruated in May 1907, and was admitted to the Maternity Hospital on 22nd November. In August she began to complain of vomiting after taking food. In October the vomiting became worse, and persisted throughout the day; from August on the patient steadily lost weight. On admission the patient was anæmic and emaciated, but there were no signs of dropsy or cyanosis; her pulse was thin and wiry in character, and the rate was 152. Abdominal and

Digitized by Google

vaginal examination revealed nothing of importance beyond slight dilatation of the os externum. The vomited matter was typically coffee-ground in character. The patient's condition forbade any immediate active interference. Attempts were made to stimulate the patient, but she rapidly sank and died 26 hours after admission. On post-mortem examination no definite lesion was found in liver, spleen or kidneys. The placenta was found to be completely prævia. After briefly reviewing some of the theories of causation and methods of classifying hyperemesis Sir Halliday Croom proceeded to state on what grounds he regarded the case he recorded as of toxic origin. In this connection he drew particular attention to the situation of the placenta.

The President thanked Sir Halliday Croom for his paper.

Dr. Sloan (Glasgow) said that, from his own experience, he did not regard displacement of the uterus as a very frequent cause of hyperemesis. In regard to this condition he was of opinion that the crux of the whole matter was "when to empty the uterus."

Dr. Haultain regarded the toxic variety of hyperemesis as the form most frequently met in the later months of pregnancy, when it was not infrequently associated with the presence of albumen in the urine. He regarded a rise of temperature as an indication for active emptying of the uterus.

Dr. Ranken Lyle expressed the opinion that the patient's danger increased inversely to the amount and severity of the vomiting, for it was in the intermittent cases that the medical man was too apt to delay, in the hope of improvement, till the chance of successful active treatment was past. He had seen a case in which abortion had been induced 23 times for hyperemesis.

Dr. Haig Ferguson stated that he attached greater importance to the pulse than the temperature as a guide for active treatment.

Dr. James Ritchie said that he had found nux vomica a useful drug in cases of neurotic hyperemesis.

Dr. Fordyce said that in some cases he had found slow dilatation better than rapid dilatation of the cervix.

In thanking the Fellows of the Society for the reception of his paper, Sir Halliday Croom said he regarded the urinary condition in conjunction with the state of the pulse and temperature as the best guide indicating the advisability of active treatment.

Owing to the lateness of the hour Dr. Lochhead's paper on "The Transmission of Nitrogenous Compounds from Mother to Fœtus" was held over to the next ordinary meeting of the Society.

Digitized by Google

Glasgow Northern Medical Society.

AT a meeting of the Society held on 7th January, Dr. T. K. Monro introduced a discussion on "The Treatment of Chronic Rheumatoid Conditions." Dr. Monro said that rheumatoid arthritis, chronic rheumatic arthritis, rheumatic gout, arthritis deformans, arthritis nodosa, nodosity of the joints, and osteo-arthritis are some of the names that have been applied to a group of joint affections; but for purposes of discussion it would be necessary to distinguish half a dozen types, the first three of which would come under the designation of rheumatoid arthritis, and the last three under that of osteo-arthritis.

The first two types involve the smaller joints, such as those of the hand, and occasionally the larger joints. The first of these two types is acute and difficult to distinguish from ordinary acute rheumatism. The second is chronic, and is associated with striking wasting of the inter-osseous muscles of the hand and distortion of the digits. The disease in both types affects the synovial membranes and soft tissues about the joints.

The third type affects children before the second dentition, and is associated with enlargement of the lymphatic glands and spleen. It runs a chronic course.

The fourth type is the localised osteo-arthritis, often confined to a single joint, *e.g.*, to hip, when it may be accompanied by obstinate sciatica. Here the cartilages, bones and synovial membranes suffer alike.

The fifth type consists of Heberden's nodes.

The sixth type is constituted by some cases of spondylitis deformans, or rigidity of the spinal column, when it is due to osteo-arthritis.

Chronic polyarticular rheumatoid arthritis is occasionally due to infection from a septic focus, such as an ulcerated pile or pyorrhœa alveolaris. The treatment of such conditions is essential in treatment of the joint affections.

Diet in those cases should be generous both in quantity and quality, both proteid and carbohydrate. Fats, cream, butter and cod liver oil were useful. Rest was necessary as long as there was pain, and patients often improved very much after long periods in bed.

Of drugs, guaiacol carbonate, arsenic and iron were useful. For pain, salicylate of soda in small doses. Aspirin and occasional opiates were good. Locally much relief comes from the application of methyl salicylate under gutta-percha tissue. Tallerman's hot air, inducing active hyperæmia, and Bier's passively induced hyeræmias were useful. After the acute symptoms passed off passive movements prevented the

Digitized by Google

formation of adhesions. The waters and baths of Buxton, Harrogate, Bath, &c., were useful in convalescence.

The treatment of osteo-arthritis was much the same as rheumatoid arthritis, but great care was necessary in the use of passive movements.

In chronic articular rheumatism guaiacum and sulphur, with iodide of potash, iron and arsenic should be used in conjunction with a generous diet.

Though the microbic theory of the origin of rheumatoid arthritis was still unproved, there are joint affections, undoubtedly due to a microbe, notably gonorrhœal rheumatism. Here the important point was to cure the original lesion, and then proceed to neutralise the tendency to fibrous adhesions by the use of iodide of potash, guaiacum, &c.

Aberdeen Medico-Chirurgical Society.

THE clinical meeting of this Society was held on the 9th January, Dr. George Williamson, the President, being in the chair.

Dr. J. F. Christie showed cases of lupus erythematosus, erythema of the face, luetic skin lesions of the face, and pemphigus vulgaris.

Dr. A. W. Mackintosh, for Dr. Edmond, showed a case of cerebral tumour with a history of four and a half years. He also showed cases of Hodgkin's disease and of peripheral neuritis.

Dr. Galloway showed 3 cases illustrating cataract, a case of moderate myopia with fundus changes, and a case of optic atrophy. He also showed a well-marked case of persistent pupillary membranes. Dr. Usher exhibited drawings of a somewhat similar case.

Dr. Howie showed a case of telangiectasis of the right axilla and upper arm. This patient had recently suffered from a suppurating gland in the right axilla, which opened through the centre of the tumour without the occurrence of hæmorrhage.

Dr. Rose showed several cases of congenital dislocation of the hip and of club foot. He also showed a case of infantile paralysis involving the quadriceps extensor cruris.

Dr. Kelly, for Mr. Gray, showed cases of resection of the elbow for tubercular disease and injury, and 2 cases of extensive burns treated by preliminary scrubbing under an anæsthetic, with subsequent dusting with equal parts of carbonate of bismuth and boric acid.

Digitized by Google

Recent Literature.

CRITICAL SUMMARIES AND ABSTRACTS.

SURVEY OF JOURNAL LITERATURE OF 1906-7 DEALING WITH SOME ASPECTS OF TUBERCULOUS DISEASE AND THE TUBERCULOUS PROBLEM.

By DAVID LAWSON, M.A., M.D. (Ed.), F.R.S.E.,
Senior Physician, Sanatorium, Banchory.

WITHOUT doubt the most important pronouncement made in recent years in relationship to the prevention of tuberculosis in this country, and one destined to exert a far-reaching influence, is that which emanated from the Local Government Board of Scotland in March 1906. For in this document, printed alike in the medical journals and lay press, it is clearly pointed out that tuberculosis comes within the purview of the Act, and therefore it is not simply within the power, but incumbent upon, public bodies to deal with it as an ordinary infectious disease. The appearance of this document gave rise to grave apprehensions in the minds of the more conservative portion of our profession, who saw in this measure a fresh instrument for oppressing the unfortunate consumptive. Dr. Byrom Bramwell[1] rendered a distinct public service in bringing the whole matter up for discussion before a meeting of the Edinburgh Medico-Chirurgical Society, which had been specially called for the purpose. From the opinions expressed by the various speakers on that occasion it was quite plain that if the recommendations of the Local Government Board were to meet with general acceptance, then it was necessary to modify certain clauses in the Act—particularly Clause No. 58—which rendered it a penal offence for any person suffering from phthisis to be found travelling in a tramcar, or for one affected in this manner to engage in the sale of vegetables. Largely as an outcome of the influence brought to bear upon the Board by that meeting, it afterwards framed and brought in a small Bill, which secures the end in view, and which provides for tuberculosis now being dealt with in a manner at which only a small minority of our professional brethren can possibly continue to cavil.

One of the immediate effects of this authoritative presentation

Digitized by Google

of the subject, and the discussion which it aroused, has been to increase the demand on the part of the public for Public Health Committees to publicly proclaim phthisis an infectious disease within the meaning of the Act, and to deal with it as such. Glasgow and Edinburgh—the minority dissenting hotly notwithstanding—proceeded to declare their cities burghs within the meaning of the Act. In this manner the Town Council of Glasgow—the first town in Scotland to do so—applied compulsory notification to phthisis on October 26, 1906, and Edinburgh following suit, did so on December 18, 1906, by a majority of 35 to 3.

Whether the Local Government Board were or were not justified in stating that "notification of itself has no administrative value, and unless it is to be followed by effective measures for curative treatment of the patients, and for the prevention of the spread of infection, the Board will not feel justified in approving of the compulsory notification of cases of the disease" is fairly open to question. But that the pronouncement furnished a strong fillip to the movement already on foot for providing sanatoria for dealing with cases of phthisis is undoubted. Thus 29 local authorities in the three counties of Wigtown, Kirkcudbright, and Dumfries decided to form and carry on at joint expense, and under joint management, a central phthisis hospital or sanatorium.[2] This, the largest combination ever effected in Scotland for such a purpose, will doubtless be followed before long by similar combinations in other parts of the country.

But it is not in Scotland alone that an awakening of the public conscience and enlightening of the public mind in this direction is taking place. Belfast Poor Law Guardians, at a cost of between £30,000 and £40,000, have just completed a sanatorium at Whiteabbey[3] with over 250 beds, designed to meet the wants of the pauper consumptives of that city, and in addition the Town Council have laid aside a sum of £22,000 to support 10 beds in the Forster Green Hospital for phthisis, to meet the needs of the working man who suddenly finds himself debarred from work by the affliction. And we have the assurance of Sir Charles Cameron that at an early date the City of Dublin[4] will have completed its scheme for providing proper sanatorium treatment for its consumptive poor. Cork and Louth are following suit, and when their plans are matured Ireland will have sana-

Digitized by Google

toria containing over 500 beds available to the impecunious portion of the public, whose cost of erection and maintenance will be entirely defrayed out of the public purses of the various counties.

But if in Scotland and Ireland measures are progressing, what about the trend of things in the land of the predominant partner? At a meeting of the Public Health Committee held in Birmingham[5] in March last it was decided to provide a public sanatorium at a cost of close upon £20,000, and to allocate an annual allowance of between £3000 and £4000 to its maintenance. The particular feature of this scheme is that it is intended to deal with early cases only, and the consideration of the later and more dangerous and infective cases has for the present been postponed.

The first move on the part of the Liverpool Corporation[6] in the direction of dealing with the disease bears a close resemblance to that of Belfast, which has already been alluded to, and to Edinburgh, which it will be remembered decided a few years ago to utilise the beds of the old Fever Hospital. The Fazakerley Fever Hospital has some spare accommodation. Indeed, there are no less than 500 beds vacant in it. The Liverpool City Council, taking advantage of the situation, have decided to place 24 of these beds at the disposal of the Health Committee for the treatment of cases of phthisis, and have appointed an extra medical officer to attend to them. An attempt will be made to carry out the most approved methods of treatment while the patients are in the hospital, injections of tuberculin controlled by observations of the opsonic index being among the remedies employed.

If good intentions count for much, the Town Council of Newport, Monmouth,[7] ought to fare well, for, like Liverpool, about a year ago it likewise decided to apportion one pavilion of its Isolation Hospital for Infectious Diseases when free to meet the claims of their phthisical patients. Unfortunately, there has not been one available since then. To meet the pressing wants of the case they have acquired a temporary wooden building, which they are using in this way, and they have decided to maintain it out of public funds. With a mortality from phthisis in the burgh, which has fallen from 2·5 in 1879 to 1 per 1000 in 1906, it would appear that the urgency is not so great for active measures in the South Wales seaport as it is in other parts of the country. Newcastle Town Council has not yet seen its way to go quite so far as to erect its own sanatorium, but by its recent action it has acknow-

Digitized by Google

ledged the principle that accommodation and treatment ought to be provided at the public expense for consumptive patients of the poorer classes, just as is done in the case of scarlet fever and other infectious diseases. As far back as March 1902 measures were set on foot by the Newcastle-on-Tyne and Northumberland branch of the National Association for the Prevention of Consumption and other forms of tuberculosis to obtain funds from the generous public to enable them to provide a good sanatorium for the poor. Their efforts, extending over 5 years, culminated on 11th May of this year, when, in the presence of a distinguished and influential party, Lord Armstrong opened at Barrasford a beautifully equipped institution, capable of admitting 50 patients. Towards defraying the capital cost of this plant the Newcastle-on-Tyne Public Health Committee of the Town Council have contributed a sum of £5000, and they have further reserved for the use of the Corporation a certain number of beds.[8]

Other schemes have been promoted, and are in course of being carried out; but sufficient has been quoted to show that an advance has taken place during the past year in the development of public opinion, and in the growth of a sense of responsibility on the part of the public to deal with tubercular disease.

Travelling Tuberculosis Exhibition Section.

About 4 years ago, for purely educational purposes, America instituted an "Itinerary Tuberculosis Exhibition." The good which it has already accomplished is believed to be incalculable. It is to Ireland that the credit of first applying the idea in these lands is due to. Almost entirely through the personal exertion and powerful influence of Her Excellency the Countess of Aberdeen an exhibition of this nature was opened at Dublin in connection with the Industrial Exhibition on October 13, 1907. A series of public lectures dealing with various aspects of the subject were organised. The lecturers, drawn from the ranks of those whose claims to the possession of special knowledge of the subject is recognised, included, amongst others, Osler, Powell, Lindsay, Lawson, Byres, Matheson and Chalmers. The exhibition has since been removed to Belfast, and thence to Portadown. By the time it has fulfilled the engagements which appear on the lengthened programme which has been made out for it, it will have visited the important centres of population in Ireland, and will

Digitized by Google

have accomplished an educational mission whose influence for good will undoubtedly be of a very far-reaching character. This beneficent work which Her Excellency has originated, and is now exerting the great influence which her exalted position and outstanding personalty possess to promote, is one, which, although the present inhabitants may not fully appreciate, succeeding generations will associate with the Vicereine's memory with feelings of deep gratitude.

REFERENCES.

1. *Scot. Med. and Surg. Journ.* January 7, 1907. Byrom Bramwell.
2. *Lancet.* October 6, 1907.
3. (Belfast.)
4. *Brit. Med. Journ.* March 23, 1907.
5. *Brit. Med. Journ.* April 6, 1907.
6. *Brit. Med. Journ.* September 2, 1907.
7. *Lancet.* September 7, 1907.
8. *Newcastle Daily Chronicle.* May 13.

MEASURES FOR DEALING WITH TUBERCULOSIS IN CHILDREN.

No feature has been more marked in the anti-tuberculosis movement in this country during the past year than the awakening of the public sense of responsibility in relationship to the urgent claims of children, and the eminent worldly wisdom implied in endeavouring to prevent the development of tubercular disease in those of tender years. If we admit the cogency of these "verba sapientiæ" that the "health of a nation lies with her children," and that "prevention is better than cure," it is difficult to escape from the natural corollary that the first efforts of preventive medicine should be directed towards the children. And yet up to this point, if we exclude the single exception of France, the outstanding feature of whose campaign against the spread of tuberculous disease has been the concentration of her efforts to prevent its development in the child, or where it has appeared in early life to deal with it on energetic lines, concerted action in relationship to tuberculosis in children has, alike in this country, in Germany and in America, been conspicuous by its absence. When we read that the autopsies of children dying from all causes in this country under 15 years of age show, in a number varying from 14 to 40 per cent., the presence of tuberculous disease, we gain some conception of the extent of the prevalence and distribution of the disease in early life.

Digitized by Google

Ashley and Wright[1] examined 155 cases of tuberculosis dying in the Manchester Children's Hospital, and found that in 141, or 91 per cent. of the total number, the lungs were affected. And of the fact that quite an appreciable number of children suffering from pulmonary and other forms of disease are in daily attendance in our schools there can be no doubt whatever. A careful examination of 900 children in one school in a very poor neighbourhood gave the proportion of possible tuberculosis of the lungs at 1·5 per cent., and of other forms of tuberculosis at less than 2 per cent. Dr. Wilkinson,[2] Medical Officer to the Oldham Educational Committee, examined 709 school children, and of this number found 54 suffering from tuberculous disease, of whom 17 (equal to 2 per cent. to 3 per cent. of the total number) had it in the pulmonary form. Nor is the result of Greenwood's[2] examination of 1028 children sent to him for examination by the school attendance officers of Blackburn more reassuring than those figures already quoted. For he discovered that no less than 121 of those children were the subjects of tuberculous disease, and of that number 64 were suffering from consumption. The percentage of cases of phthisis occurring in these 1028 children, viz. 6·2 per cent., is appallingly high. From a similar inquiry conducted near our door by Dr. Robertson[3] amongst the school children of Leith it emerged that 6 out of 806 children examined were suffering from tuberculosis of the lungs. Now it does not require any special feat in the exercise of one's imagination to picture the possibilities for harm of 6 cases of open phthisis mixing freely in a crowded school of 800 scholars, nor to recognise the clamant nature of the demand for rigorous action to which these facts point. It is an encouraging feature of the situation that the time and labour involved by these writers in ascertaining and publishing these important facts has not been spent altogether in vain. For already we are not without signs that they have arrested the attention of the ruling and educational bodies in different parts of the country. And one of the most striking points of evidence in that direction is the fact that the London County Council has quite recently caused an inquiry to be instituted in regard to the health of those scholars attending the elementary schools under their authority, with a view to disclosing the real state of affairs. We have been accustomed to quote the foresight and

Digitized by Google

practically applied sagacity of our American friends in all matters relating to the prevention and limitation of tuberculous disease, but for once in a way we must be silent. Although the first sanatorium for adult tuberculous patients in the United States was started so far back as 1875, it was not until the wives of two New York physicians, Mrs. J. E. Newcome and Mrs. G. E. Shoody, originated in 1903 the Stony Wold Sanatorium[4] at Lake Kushagud that the necessity of dealing with consumptive children received practical recognition.

Germany has been dealing with adults since 1847, yet it is only within the past two or three years that the prevention of tuberculous disease in children has become the object of practical effort. At present she possesses only 2 sanatoria whose beds are exclusively retained for the use of children—one at Belzig, near Berlin,[5] with accommodation for 30 children, and another, the Victoria Louise Hospital, for children at Hohenlychen, with accommodation for 50 inmates. Others are, however, in course of erection. Thus Germany, assimilating her methods to that of her French neighbour, is endeavouring more and more to cut off tuberculous disease at its supply, and to adopt prophylactic measures in relationship to her children. Apart from the enforcing of stringent milk supply laws and school inspection by qualified school doctors, she relies mainly upon three agencies for attaining her end. These are respectively (1) County Homes, (2) Holiday Committees, (3) Forest School. The County Homes are simple buildings put up somewhere in the woods, where children may be taken and kept for the entire day. Everything is conducted upon strictly hygienic lines, from the proper cleansing of the children to the furnishing of a suitable dietary and the enforcement of physical exercise. The Holiday Camps for poor children, reminiscent of Pearson's fortnightly holiday to the slum children of London, provides thousands of children with a yearly country holiday. They afford the only opportunity which such children possess of escaping from their tainted surroundings and of strengthening their enfeebled bodies with a few weeks spent under good hygienic and sanitary conditions. In the neighbourhood of Charlottenburg, near Berlin, a school has been erected in the heart of the woods where pale, weakly children are kept for months at a time. Here they are taught under the most advantageous conditions, due regard being paid to

Digitized by Google

their state of health. It is in France that the care of the tuberculous child and the prevention of tuberculous disease in childhood receives the greatest attention. The Children's Dispensaries, the Marine Children's Hospital and Children's Sanatoria place at the disposal of tuberculous children no less than 6000 beds.

In Scotland we are still far behind, the appointment of a medical lady by the Corporation of Glasgow, whose duties have special reference to the feeding and hygienic conditions of infants and young children, the prospective establishment of infant milk depots where sterilised milk can be procured by the poorer classes for infant feeding, and the projected allocation of 20 beds to tuberculous children at Bridge of Weir Sanatorium, being practically all we can point to in the line of special endeavour to prevent or treat tuberculosis in the infant poor population.

In Ireland organised effort for facing the problem has not yet been made; but during the past year England has shown some signs of life. True, she has the Royal Sea Bathing Hospital at Margate for the treatment of tuberculosis, in which 86 out of 150 beds have been set aside for the use of children since 1791, and these, with beds provided in other hospitals throughout the country, make close upon 500 beds available for the needs of tuberculous children. But the sanatorium idea, as applied to children, is only now within sight of application. One philanthropic society in London [6] has recently decided to establish, within easy reach of London, a sanatorium containing 35 beds for "children of consumptive tendency and predisposed to other forms of tuberculous disease," and, to enable them to do so, they now appeal to the public for the sum of £6000. The Lord Mayor, "realising through many years of close association with them the needs of crippled children," is desirous of commemorating his year of office as Lord Mayor by founding a country home to treat tuberculous children of the poor. His scheme is more ambitious, and he asks the public for £60,000 to enable him to carry it out. In August 1906 the first Children's Sanatorium proper was opened at Holt in Norfolk. It is not entirely free, but is partially endowed. It is hoped eventually to make it quite free by the establishment of an adequate endowment fund.

Such are the indications which have recently appeared that the time is not so very far distant when this part of the work of controlling and eventually stamping out tuberculous disease, most

Digitized by Google

vital if success is to be attained, will be properly assumed and thoroughly discharged.

REFERENCES.

1. *The Brit. Journ. of Tuberculosis.* Vol. i., No. 3, p. 201.
2. *Ibid.* 227.
3. *Ibid.* 236.
4. *Ibid.* 193.
5. *Ibid.* 199.
6. *Ibid.* 234.

SURGERY OF THE CHEST.

To the surgery of tuberculosis within the chest the most outstanding contribution during the past year is that by Barr,[1] of Liverpool, in the June Bradshaw Lecture. Arguing from his extensive study of the physics of the chest, he calls for a complete revolution in the method of dealing with empyæmata. "To begin with, the anæsthesia should be very light—indeed local anæsthesia is preferable. The advantage of this lies in the fact that thereby the pleuro-laryngeal reflex is preserved, and thus the vocal cords are enabled to play their part in maintaining the pressure within the lungs. A free incision in a very dependent part, about the eighth or ninth intercostal space, in a line with the lower angle of the scapula, should be made. If the ribs are close together it is well to take out a long piece of one rib and then make a free incision into the pleura. The side ought to be firmly compressed by an assistant, in order that the purulent matter may be driven out and as little air as possible permitted to enter the chest during the operation. A strip of gauze may be inserted in the wound to keep it open, but no tube should be introduced. A piece of sterile oiled silk should next be placed over the wound to act as a valve, so as to allow the fluid to escape and no air to enter. Large aseptic dressings should be applied over the valve, and the affected side ought to be well strapped to prevent movement. If the pus is very offensive and not draining well the patient can be treated in a continuous bath, and then no dressings will be required. The variety of the micro-organisms in the pus should be ascertained, and an appropriate vaccine ought to be used." Of course this no doubt sounds rank heresy to conservative surgeons, in whose minds operative interference with empyæmia

Digitized by Google

has always been associated with the drainage tube. But those who apply their minds to the extremely complex subject of the physics of the chest and pleura will recognise in it much that is eminently reasonable. One cannot help thinking that if this line of action were more commonly adopted the formidable and dreaded Estlander operation would be heard of much more infrequently than is the case at present. Barr's treatment of fluid pleurisy is familiar, but it will bear repetition, especially when in repeating it he adds improvements in his method which have been evolved by experience. He strongly cautions against the danger of aspirating too early in a case of tubercular pleurisy, "for the early withdrawal of fluid causes vascular engorgement of the lung, and so often hastens the dissemination of the tubercle bacilli and kills the patient." The proper time having been fixed upon, he recommends the complete withdrawal of the effusion in all cases. But before any great negative pressure is established, and before the patient feels any discomfort, he stops the syphon, and introduces a quantity of air about equal in amount to that of the fluid withdrawn. He then re-establishes the suction and completes the withdrawal of the effusion. All the liquid having been removed, he injects 4 c.c. of adrenalin solution (1 in 1000 diluted with 8 or 10 c.c. of normal saline), and, if he thinks it necessary, introduces more sterile air, so as to make the actual amount introduced equal to one-half or three-quarters the bulk of the fluid withdrawn. By this method it is claimed the patient suffers no discomfort, except from the slight thrust of the trocar. The obvious intention of the introduction of the adrenalin solution is to contract the blood-vessels and lessen secretion. That it does exert this action is, it is claimed, demonstrated by the fact that recurrence of the fluid when this method has been adopted practically never occurs. To the fact that the soundness of the principles underlying the treatment of pleurisy advocated by Barr is being recognised in other quarters the joint testimony of Dujour and M. Foix [2] bears witness, for at a meeting of the Société Medicale des Hopitaux of Paris these distinguished surgeons called attention to their own experience of treating large chronic pleural effusion by means of the withdrawal of fluid and injection of air. The result of their treatment was good, and they are now strong advocates of this method.

Forlanini's [3] method of treating phthisis, which is claimed to be new, bears a close resemblance to that of Barr's. But it differs

Digitized by Google

from Barr's in so far as he does not employ adrenalin, and, further, instead of injecting sterilised air, he employs for the purpose nitrogen gas. This gas he introduces at a sufficiently high pressure to cause collapse of the lung, and so ensure rest of the organ. As the gas tends to become absorbed as time goes on, the operation requires to be repeated from time to time during those months when treatment of the lung condition is required. The method is, in short, merely a modification of the author's artificial pneumothorax treatment of phthisis, with which we have been long familiar, it having masqueraded under different guises during the past 25 years or more. He records his experience in 25 cases of phthisis and in pulmonary abscess, and as he says the results attained were in accordance with his expectations, we may assume they were favourable. Thorne[4] seriously suggests a method which should be adopted preliminary to commencing out-door treatment of phthisis. It consists in opening into the pleura by means of an incision through an intercostal space, keeping the wound open for a day or two by means of gauze, and then allowing it to slowly heal. He does not, however, record the result of any case in which he has tried it, nor has he enlightened us as to the means which we are to employ in order to succeed in persuading our patients to submit to such treatment.

REFERENCES.

1. *The Brit. Med. Journ.* November 9, 1907. "The Pleuræ-Plural Effusion and its Treatment," by Sir James Barr.
2. *Lancet.* November 10, 1906.
3. *Lancet.* July 20, 1907; and *Deut. Med. Woch.* August 30, 1906.
4. *Brit. Med. Journ.* September 28, 1907.

ABDOMINAL TUBERCULOSIS, INCLUDING GENITO-URINARY.

The already large number of writers on the subject of abdominal tuberculosis and its treatment has been substantially recruited during the past year. From a multitude of contributors there stand out the names of Kidd,[1] Hartmann,[2] Pringle,[3] Nash,[4] Henderson,[5] Moynihan,[6] Rovsing,[7] Israel,[8] and Godlee,[9] whose writings merit notice. Of these the last three named deal more particularly with tuberculosis of the urino-genitary organs. Although in foreign literature we find mention of hyperplastic

Digitized by Google

tuberculosis of the bowel as far back as 1890, up to January 1907 only four cases of the subserous group have been described. Even Rolleston, in his edition of "Nothnagel's Pathology," dismisses the subject in a few lines. Under those circumstances the valuable monograph of Kidd entitled "Hyperplastic Tuberculous Pericolitis"[1] is particularly welcome. Briefly put, the points established by him are as follows:—

1. There arises a peculiar form of localised chronic hyperplastic inflammation of the submucous and subserous coats of the bowel, which may lead to intestinal obstruction and its consequences.

2. This is in all probability due to a localised infection of the wall of the gut by an attenuated form of the tubercle bacillus.

3. This form of inflammation is very liable to be mistaken for carcinoma, or sarcoma, either at the operation or the necropsy.

4. By careful examination where its presence is suspected, this form can be recognised at the operation.

5. It can always be recognised with certainty by microscopic examination.

That the value of this contribution in the matter of prognosis and treatment is considerable must at once be apparent. It is quite possible that in the occurrence of this condition lies an explanation of the favourable result which has at times attended operation on what was genuinely believed at the time to be cases of abdominal cancer. Pringle,[3] in the *Glasgow Medical Journal*, deals with tuberculous tumours of the cæcal region. Practically the only variety of tuberculous tumour found in the ileo-cæcal region is this hyperplastic form. This, when it does occur in the bowel, is the result of a slow-growing infection, and may, according to Conruth, "result from a backward invasion of the tissues of the cæcum from tuberculous glands in its immediate proximity." Associated with the process is the formation of tubercles which tends to caseate later on, and a great production of connective tissue spreads longitudinally and concentrically up and down from the area first involved. This leads to a very great thickening of the walls of the affected part of the bowel, which in turn becomes hard and more or less nodulated on the surface. It is only a matter of time for a certain amount of stricturing to appear with all its attendant evils. The condition appears mainly between the ages of 20 and 40 years, an important point in the differential

Digitized by Google

diagnosis from carcinoma, which occurs mainly after 40 years of age.

Differing from Demoulin and Depage, it is interesting to note that Mikulicz and Kausch maintain that it is brought about in the subjects of pulmonary tuberculosis swallowing tuberculous sputa. The operation recommended for the condition are twofold: 1. Resection, or 2. Exclusion of the affected part. The reports which Pringle gives of four cases in which one or other of these operations was performed demonstrate the efficacy and suitability of this line of treatment when such a condition is met with. In the *Practitioner*,[5] 1907, Bonhôte Henderson describes two cases, one of which simulated intussusception and the other extra-uterine fœtation.

Hartmann[2] of Paris took for the subject of his address to the Medical Society of London, "Surgical Forms of Ileo-Cæcal Tuberculosis." The address contained a good instructive résumé upon the work done upon a type of disease which has been known to medicine for so short a period as 15 years. He shows the improvement which has taken place in the surgical procedure adopted to deal with it, and clearly brings out the fact that more especially since 1900 the success attained has been very striking. Out of 7 cases of resection he has had only one failure. Altogether he has dealt with 217 cases, of which 212 were males.

Like ileo-cæcal tuberculosis, tuberculous appendicitis occurs mainly between the ages of 20 and 40. And this condition occurs mainly in males. Two such cases which came under my own observation during the past year occurred in males, the subjects of pulmonary tuberculosis, in the one case at 19 years of age, and in the other at 26. Operations were performed in both instances by Mr. H. W. M. Gray. In both cases the appendix was found to be gangrenous, and had perforated, and both recovered. The disease is said by Herisson[10] to commence in the mucous membrane, and to spread centrifugally, gradually affecting the coats one after another. Atrophic and cystic varieties sometimes occur, but it is the hypertrophic form which prevails. Clinically three forms are recognised, viz., acute, chronic and latent, of which the last-named, on account of its unimportance, may be ignored. The symptoms of the acute form resemble those present in acute non-tubercular appendicitis, with this marked distinction, that whilst

Digitized by Google

constipation usually accompanies the non-tubercular form, diarrhœa is the rule in tubercular appendicitis. The same feature marks the chronic form also. It is a further characteristic of both forms that during the relatively quiescent intervals the symptoms are never completely in abeyance. The disease being insidious and tenacious, and possessing a strong tendency to spread, the prognosis is much more grave than in simple appendicitis. In *Il Policlinico*, September 1900, Gaudiani[11] reports a case and discusses several questions in connection with the disease, probably the most interesting of which is the tuberculous ileo-cæcal disease. Where ileo-cæcal tuberculosis and tuberculosis of the appendix co-exist it is difficult to determine the original lesion. The usual opinion is that the appendix was attacked last. Palermo in 7 cases of ileo-cæcal tuberculosis found the appendix only 3 times. In the remaining cases it had been attacked first and completely destroyed. And this he believes to be the usual sequency of events in such cases.

The December Bradshaw Lecture of 1907 was noticeable for the fact that it contained a well-timed protest on the part of Godlee[9] against the growing tendency on the part of our younger surgeons to remove indiscriminately all tuberculous organs, and, in particular, organs of the genito-urinary system. His lecture was a plea for conservative as opposed to radical methods. In striking contrast to his views there stands out those of Kronlein,[12] who boldly advocates nephrectomy as the ideal, and practically the only, operation for tubercular nephritis. To do him justice, Godlee is not a blind opponent of nephrectomy, nor does he estimate its value, but he is an advocate for a very careful selection of cases where the operation is to be employed. Speaking in a similar strain in referring to Wright's method, he says, "I am reserving the question of treatment by bacterial vaccines, but I think that with our present light it should be employed in all suitable cases of tuberculosis of the bladder." The general trend of the lecture is clearly expressed in the closing sentences, which I cannot do better than quote: "Such, O shade of Dr. Bradshawe, is the little stone, a mere pebble, which I cast in passing upon your monument of fame. But should it be the means of preventing one unnecessary or pernicious nephrectomy, or preserve to one poor wretch the internal secretion of his testicles,

Digitized by Google

neither your bequest nor my labours will have been expended in vain."

Less conservative are the views advocated by Rovsing[7] of Copenhagen, in a paper which is a most important contribution to the literature of tuberculous disease of the bladder. Sharing the opinions of Baumgarten and Hansen, that tuberculous disease of the bladder is always either primary or comes from above, *i.e.*, tuberculous infection cannot advance against the stream of urine, he believes that when the kidney is affected along with the bladder, it ought to be explored and dealt with. His routine which he recommends is as follows:—

1. Find out the source of the tuberculous cystitis (kidney) and remove it.

2. Wait for a period to see if the condition is going to subside or not.

3. If not subsiding, attack the disease by local measures. The local measures advocated are either excision of the tuberculous area, or, better still, the injection of carbolic acid. As the latter method has achieved a remarkable degree of success in his hands it may be well to state at least the outline of the treatment. The treatment is not begun until 2 months after nephrectomy has taken place. The bladder having previously been washed out, 50 c.c. of a 6 per cent. solution freshly prepared, and at a temperature of 35 c., is injected into it. The solution is left in the bladder for 3 or 4 minutes, after which it is allowed to escape, and this it does in a milky condition. The process is repeated 3 or 4 times until it returns clear. The treatment is spread over a period of 9 to 12 months. Afterwards the bladder is not washed out, and a morphia suppository is given. The injections are administered every 2 days, increasing gradually to intervals of a fortnight and a month, depending upon a comparison of the cystoscopic appearance of the bladder. Carbolic poisoning was never observed, and the results obtained, it is claimed, have been excellent. The value of nephrectomy in benefiting and even curing tuberculous cystitis is further alluded to by Israel[8] in a paper read before the Berlin Surgical Society, in which he deals with no less than 102 nephrectomies which he had himself performed. He was able to follow the subsequent history of 73 of these. In 45 patients who were under 15 years of age he afterwards found an average gain in weight amounting to 18·7 kilos,

Digitized by Google

and in 86 per cent. of the cases the general conditions of health was very good indeed. From the fact that the results were better the earlier the operations were performed, Israel infers that until an internal remedy against the condition has been discovered, nephrectomy should be performed as soon as a tuberculous affection of the kidney has been recognised.

Testicle.

Although contributions to the Surgery of Tuberculous Testicles have been made by (1) Poissonnier,[13] (2) Power,[14] (3) Keyes,[15] nothing sufficiently striking has emerged to warrant further notice at this time.

References.

1. *Lancet.* January 5, 1907. "Hyperplastic Tuberculous Colitis," by F. S. Kidd.

2. *Brit. Med. Journ.* April 13, 1907. "Surgical Forms of Ileo-Cæcal Tuberculosis" by H. Hartmann.

3. *Glasgow Med. Journ.* August 1907. "Notes on some Tumours of the Cæcal Region," by J. Hogarth Pringle.

4. *Lancet.* October 5, 1907. P. 957. "Enterotomy," by W. Gifford Nash.

5. *Practitioner.* November 1907. "Some Unusual Abdominal Cases," by T. Bonhôte Henderson.

6. *Brit. Med. Journ.* "The Pathology of the Living," by B. G. A. Moynihan.

7. *Scot. Med. and Surg. Journ.* April 1907. "Surgery," by C. B. Paul. *Archiv. für Klinisch Chirurgie.* Article by Thorkeld Rovsing.

8. *Lancet.* June 6, 1907. "Nephrectomy for Tuberculosis of the Kidney," by Israel.

9. *Lancet.* December 14, 1907. "Prognosis in Relation to Treatment of Tuberculosis of the Genito-Urinary Organs," by Rickman J. Godlee.

10. *Gazette des Hopitaux.* April 1906. Article by Herisson.

11. *Il Policlinico.* September 1900. September 1906. Article by Gaudiani.

12. *Archiv. für Klinische Chirurgie von Langenbeck.* Vol. lxxiii. P. 277.

13. *Gazette des Hopitaux.* No. 32. March 16, 1907.

14. *Brit. Med. Journ.* September 21, 1907.

15. *Arch. of Surgery.* June 1, 1907.

Calmette's Reaction.

Scarcely a year has passed since Von Pirquet read a paper before the Berlin Medical Society, in which he showed that

Digitized by Google

cutaneous inoculation of children by a 25 per cent. solution of tuberculin was followed, in the case of the tuberculous, by a local reaction in the form of a typical papule, and the case of the non-tuberculous by no reaction whatever.

A few days later Wolff Eisler showed that a similar reaction could be obtained in the conjunctiva of affected persons. Working upon this basis Calmette reduced the strength of the solution employed, and proceeded to investigate how far the procedure may be relied upon for diagnostic purposes. The publication of the results of his labours and the claim which he made, that by this means we can reliably and effectively diagnose tubercular disease, and exclude non-tuberculous conditions, has been followed by investigation along similar lines by many others, and the usual rush on the part of those observers to record, in our opinion in some cases altogether prematurely, the conclusions which they have arrived at as to its merits. From this table (appended), by no means an exhaustive one, there seems ample evidence that the reaction in cases of tuberculosis is nearly constant. There can be little doubt that before long, after the present wave of enthusiasm has died down, the inevitable swing back of the pendulum of medical opinion will take place, and that a period of almost two years must elapse before we will be able to put a fair and just estimate on the value of this method. Meanwhile this much seems to be demonstrated—

1. That except in very grave or moribund cases of tuberculosis the reaction can be obtained.

2. That although it is usually confined to one eye it is not always so, for the characteristic conjunctivitis sometimes appears in the non-inoculated organ.

3. That no relationship exists between the severity of the local reaction obtained and the acuteness or chronicity or type of the disease.

4. That the reaction is very rarely found in persons who are not the subjects of tubercular disease; and that,

5. Consequently the test, although not absolutely reliable, is of considerable value.

Digitized by Google

Observer.	Number of Cases of ascertained Tuberculosis.	Reactive.	Percentage.	Notes.
1. Letulle[1]. .	75	72	96	Two of the remaining 3 were moribund and the other did not show T. B. post-mortem.
2. M'Lennan[2] .	25	23	92	In one of remainder, child by crying probably ejected the tuberculin.
3. Webster[3] and Kilpatrick	43	43	100	
4. Downes[4] .	22	12	54	
5. Austin[5] and Grunbaum	20	18	90	
6. Andeous[6] .	13	12	91	Author's own cases.
,, .	261	...	94·6	Cases collected by author.
1. Prouff[1] . .	70	69	98	Remaining case moribund.
1. Eyre and others[1]	13	13	100	

REFERENCES.

1. *Lancet.* "The Tuberculin Ophthalmo-Reaction of Calmette," by Eyre, Wedd, and Hertz.

2. *Brit. Med. Journ.* "Observations in the Ophthalmo-Reaction to Tuberculin." M'Lennan.

3. *Brit. Med. Journ.* "Notes on 121 Cases Tested with Calmette's Tuberculin." Webster and Kilpatrick.

4. *Brit. Med. Journ.* "The Tuberculin Ophthalmic Reaction."

5. *Royal Society Transactions.* Vol. i.

6. *Rev. Med. de la Suisse Rom.* October 20, 1907.

BONES AND JOINTS.

Koenig's[1] "Die Tuberculose der Menschlichen Gelenke, sowie der Brustwand und des Schadels," a monograph on tuberculosis of the joints, designed to be a gift to His Excellency Ernst von Bergmann on his 70th birthday, is of special interest to surgeons in general and to orthopedists in particular. It possesses a special interest in so far as it contains a record of that distinguished observer's experiences of Bier's congestion treatment, and his opinion upon its value. In view of the tendency of late in this country and in America to bring back to favour that line of treatment, his unfavourable verdict merits careful consideration. His

Digitized by Google

protest against the growing popularity of the treatment is based on the admitted tendency in certain types of cases to produce abscess formation, a complication which immensely increases the gravity of the case. Weighty as such an opinion must always be it is only fair that opinions on the other side of the question should also be heard. True, the advocates for its further adoption may not occupy so exalted a position as that held by Professor Bergmann. Still, the experience of Dr. R. Klapp[2] and Dr. Schmieden,[2] Dr. Bier's assistant, entitles them also to speak with a certain measure of authority. And so satisfied are they of the benefits to be derived by producing local hyperæmia in tuberculous joints, that they have devoted their attention to extending the treatment into areas where its application has hitherto been considered impracticable. Local hyperæmia of the skull or the perinæum cannot possibly be attained by the same means as we secure it in the case of a limb, viz., by pressure of a tourniquet. Some other means required to be found for that, and this they devised in the form of a glass, not unlike a dry-cupping glass, connected with a small rubber bag capable of being compressed, and so producing a vacuum over the area covered by the glass. By this means local congestion of that part is produced. In the *Boston Medical Journal* of 6th June Dr. Sever[3] has reported good results from this treatment of tuberculous sinuses due to bone disease. These are proverbially slow in healing. Drainage is difficult and requires assistance. By cup suction this indication is fulfilled and, moreover, hyperæmia is produced which stimulates the healing process. In his cases the treatment was carried on for an hour daily. At no time should the suction be sufficiently strong to cause pain. The paper read by Von Schmeiden on behalf of Professor Bier cannot well now be reproduced. But the present attitude of Bier in relationship to the treatment which bears his name is sufficiently indicated by quoting the closing sentence of the paper referred to. "Formerly I considered the hyperæmic treatment of tuberculosis good: now I consider it the best."

REFERENCES.

1. *Die Tuberculose der Menschlichen Gelenke, sowie der Brustwand und des Shadels.* Berlin, 1906.
2. *Lancet*, 28. 1907. P. 911. "Bier's Treatment of Tuberculous Sinuses."
3. *Boston Med. Journ.* June 6, 1907.

Digitized by Google

MEDICINE.

By EDWIN BRAMWELL, M.B. F.R.C.P.,
Assistant Physician to the Royal Infirmary and to Leith Hospital.

Upon the Mechanism of Certain Physical Signs.

In this communication it is proposed to refer to 3 physical signs, a discussion of the mechanism of which necessitates similar anatomical considerations. The signs in question are :—

(1) Hypotonia of the hamstring muscles.

(2) Kernig's sign.

(3) "La flexion combinée de la cuisse et du tronc."

Further I append a note upon extensor rigidity at the hip-joint in hysteria.

Hypotonia of the Hamstring Muscles.—All the voluntary muscles of the body are constantly in a state of tension or tone which is uninfluenced by the will. The muscle tone, or "neural tone" as the physiologists term it, is maintained by a continuous stream of afferent impulses which pass from the periphery (from the muscles, according to Sherrington), by way of the peripheral nerves and posterior roots to the spinal cord, from which efferent impulses proceed through the anterior nerve roots to the muscles. Muscle tone is thus dependent upon the integrity of a reflex arc.

It was long ago shown by Brondgeest that when in a "spinal frog" (an animal in which the spinal cord has been divided in its upper part by a transverse incision which completely separates the spinal cord from the brain) the posterior roots of the sciatic plexus are severed on one side and the animal suspended by its head, the posterior limb on that side hangs quite limp. This is accounted for by an actual lengthening of the flexor muscles, a consequence of loss of tone. Diminution or loss of muscle tone (hypotonia) is met with in disease, both in lesions of the lower motor neurons, *e.g.* poliomyelitis anterior acuta and in lesions confined to the posterior roots and columns of the spinal cord, *e.g.* tabes dorsalis. It is necessary that we should know how to demonstrate directly both its existence and its degree.

A hypotonic muscle is a relaxed muscle and capable of greater elongation than a muscle which retains its tone. We therefore test for hypotonia in muscles by ascertaining whether they are unduly extensible; in other words, by noting whether the degree of passive movement which can be carried out at any given joint is greater than in health.

In the case of many muscles, an observation of this kind is difficult.

Digitized by Google

The construction of the elbow-joint, for example, is such that extension beyond a certain point is limited by the bony structures, while flexion is practically limited in health by contact of the upper arm with the forearm. It is therefore impossible by this method to ascertain whether the biceps are hypotonic, and difficult to demonstrate hypotonicity of the triceps. In the case of the hamstring muscles, however, we have an anatomical arrangement which is peculiarly adapted for an observation of this kind. Let me explain why it is that hypotonia of the hamstrings is, if present, so readily demonstrable. If the extended leg is flexed upon the abdomen, it is usually impossible to bring it up to, and certainly not beyond, a right angle with the trunk. That the inability to move the limb beyond this point is due neither to the bony or ligamentous relations of the joint, nor to the gluteal muscles, is proved by the fact that when the leg is bent at the knee, the thigh can be flexed until it comes in contact with the abdominal wall. The limitation of movement when the leg is extended must, therefore, depend upon the resistance to further extension which is offered by the hamstrings. Proof of this is afforded both by the tense condition of the hamstring muscles, and by the discomfort which is referred to them when an attempt is made to carry out this movement beyond its natural limit. When, therefore, it is found possible to flex the extended leg beyond a right angle, we are justified in assuming that the hamstrings are unduly extensible, *i.e.* that they are hypotonic; and further, since the maximum limitation of movement in the healthy individual is very constant we may conclude, provided no undue mobility of the dorso-lumbar spine exists (see discussion upon the mechanism of Kernig's sign), that the increased range of movement is proportionate to the degree of hypotonia that is present. This statement requires some qualification. The abnormal flexion at the hip-joint attained by the ballet dancer is only acquired by prolonged practice, and is, I take it, probably explained by an actual lengthening of the hamstring muscles. Again, it may be that in addition to elongation of the hamstrings excessive mobility of the dorso-lumbar spine plays a part in enabling the acrobat to walk with his head between his legs. A year or two ago I met with a case of fixed taxic tabes in which there was a great increase of the range of movement of flexion of the extended leg upon the trunk. The patient assured me that he had noticed this peculiarity since boyhood. If the condition does occur in consequence of a developmental abnormality, I can affirm from experience that this cause must be very rare. Hypotonia is so pronounced in some cases of tabes that the extended leg may be flexed upon the trunk until the patient's foot is brought in contact with his face. Hypotonia of the hamstring group is not

Digitized by Google

uncommonly demonstrable at a comparatively early date in cases of tabes dorsalis, and may be of distinct value in the diagnosis of this disease.

I may mention, in passing, that hypotonia is often present in disease of the cerebellum, in unilateral lesions of which it is most marked in the homolateral limbs. Again, when in the human subject conduction in the spinal cord has been completely interrupted, as a result of injury, more rarely of disease, the muscles below the level of the lesion are hypotonic.

Kernig's Sign.—When discussing hypotonia of the hamstring muscles, we had occasion to mention that under normal conditions the extended leg could be flexed at the hip-joint to almost a right angle with the trunk. So long as 1884, Kernig of St. Petersburg pointed out that in cases of meningitis, even in the absence of any observable contractures in the lower limbs as the patient lies in bed, it is often impossible when he sits upon the edge of the bed to fully extend the leg at the knee-joint. The sign may be very conveniently demonstrated, as Osler has indicated, when the patient lies upon his back. The observer elevates the thigh to the vertical, and maintaining it in this position attempts to fully extend the leg. When Kernig's sign is well marked the leg cannot be extended beyond a right angle with the thigh. Kernig regarded the sign as pathognomic of meningitis, but its presence has since been noted in sciatica and lumbago (here no doubt the movement is limited by the pain which it produces), cerebral and cerebellar hæmorrhage, rigidity of the spine, tabes dorsalis, typhoid fever, hysteria, certain toxic conditions which clinically resemble meningitis (meningism), &c. Further, the sign is not always present in meningitis, while it may be present at one time, absent at another, in the same case. Undoubtedly the sign is of value in the diagnosis of meningitis, although it must be admitted that it is not pathognomic as was at one time supposed.

What is the mechanism of Kernig's sign, and why should it occur in association with so many clinical conditions? It seems obvious to the most casual observer that the hamstring muscles are responsible for the limitation of movement. Is the diminished range of movement to be explained by muscular hypertonia; in other words, is Kernig's sign to be regarded as an indication of hypertonicity of the hamstring muscles? Until recently I regarded this explanation as satisfactory, but further consideration, especially since reading a paper by Moncano, to be referred to later, has served to modify this opinion.

Increased muscular tone (hypertonia) manifests itself in muscular spasticity. The hypertonic muscle is shortened, and the degree of hypertonia present may be gauged by the resistance offered to passive

Digitized by Google

elongation of a muscle when the patient at the same time voluntarily relaxes it. When hypertonicity is extreme flexor contractures are often produced, since, for reasons into which it is unnecessary to enter, the spasticity of the flexors tends to overcome that of the extensors. Holding, as I have hitherto done, that Kernig's sign is a manifestation of hypertonia of the hamstring muscles, I have accounted for the sign not by supposing that the hypertonicity was confined to this group of muscles, an explanation which appears to me difficult to accept, or induced in them reflexly by the attempted extension of the leg, but by assuming as more probable that a slight degree of hypertonicity existed in all the muscles of the lower limb, the length of the hamstrings and of the lever to which they are attached (the tibia) permitting of its demonstration in connection with these muscles when its presence in the other muscles of the limb was not clinically detectable. Charles Moncano (*Gaz. des Hop.*, December 10, 1907) offers a different explanation. As this author correctly states, flexion of the extended lower limb to a right angle with the trunk is associated with a rotation of the pelvis around its transverse axis, a movement which is only possible at the expense of a definite dorsiflexion of the dorso-lumbar region of the spine. This rotation of the pelvis, by diminishing the distance between the origin and insertion of the hamstring muscles, permits of a greater degree of flexion at the hip when the limb is maintained in the extended position. When rigidity of the spine exists, whatever be its cause, rotation of the pelvis is no longer possible, the extended leg cannot be flexed to a right angle with the trunk, and for the same reason, if the thigh is flexed to a right angle, the leg cannot be fully extended. As proof that this rotation of the pelvis occurs and admits of an additional degree of flexion of the extended leg upon the trunk, it is scarcely necessary to recall that in examining a case of suspected ankylosis of the hip-joint we always, in the first instance, fix the pelvis.

Moncano believes that the rigidity of the spinal muscles which is so often present in meningitis, by preventing bending of the lumbo-dorsal region of the spine, accounts for the frequency with which Kernig's sign is met with in this disease; in other words, he regards Kernig's sign as evidence of rigidity, more or less pronounced, of the spinal column. The admission of this explanation does not, however, exclude the probability that hypertonia of the muscles of the limb itself (the hamstrings) may account for the presence of the sign.

"*La flexion combinée de la cuisse et du tronc.*"—Some years ago Babinski, whose name is so well known in connection with the plantar reflex, described this sign as an aid of importance in distinguishing between organic and functional hemiplegia.

Digitized by Google

Before describing the sign let me, in the first place, refer to the muscular mechanism called into play when an individual attempts, with his arms folded across his chest, to rise from the supine to the sitting position. I think we may say that the function of skeletal muscles is to promote, to prevent, or to permit of movement at the joints to which they are related. The extensors at the wrist, for instance, may act either by dorsiflexing the hand and fingers on the forearm, by preventing palmar flexion at the wrist, or by aiding the contraction of the flexors of the fingers. That this latter statement is correct is proved by the weakness in the grasp which results in musculospiral paralysis. Again, it is necessary to remember that although we are in the habit of applying the terms origin and insertion to the customary fixed and mobile attachments of a muscle, these may at any time, according to circumstances, be reversed. The relevance of these remarks to what follows will be obvious to the reader.

Two groups of muscles are essentially engaged in the movement of rising from the supine to the sitting position. Firstly, the extensors at the hip-joint fix the limb in the position of extension. Secondly, the flexors at the hip, having now a *point d'appui* from which to act, contract and flex the trunk on the thigh. The sternomastoids, abdominal and other muscles are also concerned, as one can readily demonstrate, but their participation need not detain us. The individual who has not given special thought to the mechanism of the movement in question, when he attempts to carry it out is quite unconscious of the contraction of the extensors at the hip, which permits flexion to take place, and indeed plays an essential part in its performance.

Now when a patient suffering from an *organic* hemiplegia attempts, with his arms folded across his chest, to rise from the supine to the sitting position, it may be noticed that the foot on the hemiplegic side is raised a few inches from the bed, descending again as the patient relaxes his efforts. The foot on the sound side remains in contact with the bed all the time. This is "la signe de flexion de la tronc sur la cuisse." In some cases both feet are raised, but when this is so that on the paralysed side is raised higher than its fellow. When loss of power is complete the sign is not observed.

The elevation of the paretic foot in organic hemiplegia is accounted for by the patient's inability to contract the extensors of the hip with sufficient power to keep the leg in contact with the bed, together with the tendency that exists in hemiplegia for the flexors to overcome the extensors, as exemplified in the development of flexor contractures in these cases.

In cases of *functional* (hysterical) hemiplegia, on the contrary, neither foot is raised. How is this to be explained? Hysterical paralysis, it is

Digitized by Google

affirmed, is confined to movements of which the patient is conscious. The affected limb is therefore not elevated, since the extensors at the hip, unknown to the patient, participate in the movement as is their wont. This is the explanation offered by Babinski. The sign is of occasional use in diagnosis.

Extensor Rigidity at the Hip-Joint in Hysteria.—A case of hysterical paralysis recently examined by the writer exemplifies in a striking manner the influence of consciousness in relation to the existing motor defect. Since the defect in question was referable to the movements at the hip-joint, the observation may be referred to in connection with the points already touched on in this paper. The patient, a young girl, was suffering from an hysterical hemiparesis, together with certain unilateral alterations of sensation and symptoms referable to the special senses which are characteristic of that disease. In passing, it may be mentioned that the complex nature of these hysterical manifestations, and the constancy with which their features are reproduced in different cases, excludes all conceivable possibility of malingering. The affected lower limb was maintained in a position of rigid extension as the patient lay in bed, so that it was not possible, even when I used considerable force, to produce the slightest flexion at the hip-joint. The patient was able to sit up in bed, however, without any discomfort; in other words, it was possible to flex the trunk on the thigh, but impossible to flex the thigh on the trunk. The two movements, however, are identical, therefore the inability to flex the thigh or to allow of flexion of the thigh on the trunk, must have been dependent on a "fixed idea." In this case the patient was obviously conscious of the rigidity of the limb, and convinced that she was unable to flex it at the hip. It is interesting to compare the relationship of consciousness to the contraction of the extensors at the hip in this case with that which occurs in a case of hysterical hemiplegia without this unusual rigidity, when the attempt is made to rise from the supine to the sitting position. The conception of the "fixed idea" raises many interesting points connected with symptomatology, diagnosis and treatment, to touch upon which would lead us, however, far beyond the intended scope of the present communication.

Digitized by Google

SURGERY.

By HENRY WADE, M.D., F.R.C.S.,
Lecturer in Surgery, School of Medicine of the Royal Colleges, Edinburgh.

CANCER. A SUMMARY OF THE RESULTS OF RECENT INVESTIGATIONS.

DURING the year which has passed material progress, undoubtedly, has been made towards a possible ultimate "conquest of cancer." To speak of this triumphant achievement as at present anywhere near of accomplishment would, however, be a gross perversion of the truth, as the cause of cancer is still unknown, and no treatment has so far been discovered to replace the surgeon's knife in any case amenable to this remedy.

The tendency of cancer research in recent times has been to concern itself mainly with the experimental investigation of the disease as it presents itself in mice suffering from certain tumours, which clinically and histologically are true malignant neoplasms, but differ from the vast majority of new growths met with in other animals, in that they can be transplanted with relative facility into animals of the same species.

By this means many most important discoveries concerning the true nature of cancer have been made, to certain of which I shall have occasion to refer later. To the disinterested critic, however, it has sometimes been apparent that the enthusiastic investigator in this field of research occasionally would appear to forget that it is after all with cancer as it is met with in man that mankind is especially concerned, and investigation of human neoplasms must, *per se*, have an especial value.

In connection with the etiology of carcinoma, Ford Robertson and Young[1] have recently recorded the results of their investigations of the histological features of carcinomatous tumours, revealed by an improved ammonio-silver method of staining. They claim by this means to have obtained a considerable amount of additional evidence of the occurrence of special intra-nuclear bodies of the nature of those previously described by one of them, and to have shown that structures morphologically identical with spirochæta microgyrata can be demonstrated in human carcinoma, and to have confirmed the previous observations of Gaylord[2] and Calkins[3] of the presence of bodies morphologically identical with the above-mentioned spirochæta in Jensen's mouse adeno-carcinoma.

These observers would infer that the bodies described stood in an

Digitized by Google

etiological relationship to the neoplasms in which they are found—an opinion that must still await confirmation.

The micrococcus neoformans of Doyen, which he at one time claimed to be the causal factor in the production of carcinoma, is now accepted by most observers as identical with the staphylococcus epidermis albus. This organism may be found in as many as 80 per cent. of new growths examined, and although it is looked upon by all pathologists now, not as a casual virus, there are others who consider it to be not a mere casual concomitant. Thus Sir A. Wright has recently published an account of a case of inoperable cancer of the larynx treated by him by the subcutaneous injection of a vaccine prepared from the micrococcus neoformans, combined with a determination of the opsonic index. The treatment is claimed to have produced some beneficial results; the patient, however, ultimately died of the malignant growth.

That X-rays might, under certain circumstances, lead to the development of cancer has been recognised for some time.

The most recent case of X-ray epithelioma following X-ray dermatitis is that recorded by Porter and White.[4] It brings the number of cases of undoubted X-ray cancer up to 11, of which 5, and probably 6, have proved fatal. In the treatment of his case Porter observed that where he skin-grafted for the chronic intractable ulceration which preceded the epitheliomatous change the majority of the grafts adhered, they never broke down afterwards, and epitheliomata did not develop in them. He would recommend that early excision be practised in cases of persistent X-ray ulceration to avoid the development of malignant characteristics by it.

Starting from this point, that workers with X-rays are liable to become affected with true squamous-celled carcinoma, Lazarus Barlow[5] examined electrically and photographically a variety of substances which are commonly looked upon, by the irritation which their presence produces, as predisposing to cancer, to determine if they and X-rays shared any factor in common. He found that such substances as paraffin, soot, gall-stones, clay pipes, &c., did not fall exactly under the category of recognised radio-active substances, a result which revealed the not unexpected fact that it was not a common radio-activity which was responsible for them sharing the accusation of predisposing under certain circumstances to the production of cancer.

The most important contribution made during last year to the study of cancer is the work of Professor Muir. He has investigated the proliferation of the liver cell in repair, compensatory hypertrophy and hyperplasia, and in primary tumours of the liver. In repair, following trauma, he found that there occurred an extensive over-

Digitized by Google

growth of young connective tissue and epithelial cells at the margin of the laceration. The new epithelium is in great part derived from the liver cells. Probably in the later stages of the process of repair the epithelial elements atrophy in the contracting connective tissue strands, and no important formation of new liver tissue occurs. In all the primary malignant tumours derived from liver cells examined by him cirrhosis was present, and the co-existence was, in his opinion, not accidental; the cirrhosis precedes the cancer and was in some way related to it. The tumours take origin from the liver cells, direct continuity being traceable from one to the other. The initial proliferative changes in the liver cells correspond to those seen following trauma, but progress to the formation of multiple foci of apparently independent new growth, which may later be associated with metastatic deposits of the liver cell type in other parts of the body. The importance of these results lies in the manner in which they co-relate the process of repair (the inflammatory process) to the process of tumour growth, and afford an opportunity of studying the inception of the latter in a human organ.

This latter change is one where one cell element predominates, actively divides, and by this means leads to the formation of a neoplasm.

Professor Muir communicated the results of his investigations to the Pathological Society of Great Britain and Ireland at its last summer meeting, and they are to be published in the *Journal of Pathology and Bacteriology* for January of this year.[24]

The experimental production of cancer has been attempted by various means. The most recent recorded experiments conducted with this object in view are those done by Fischer.[6] He endeavoured by the injection of various irritants to so modify the process of repair as to lead to the production of new growth.

His results, although he failed to create true tumours, are of very considerable interest. After using various substances without much success he was finally able, by injecting a suspension of Scharlach R. in oil underneath the epithelium of rabbits' ears, to produce a very remarkable picture, where, besides the usual appearances seen at the site of any chronic inflammatory focus, changes were present in the adjacent epithelium. A few days after the injection the epithelial layer is seen to be much increased in thickness, and many of the cells of its germinal layer are seen to be undergoing mitosis. From this layer processes later are found to extend, and these surround the oil droplets. The connective tissue is seen to be studded with columns and nests of cells, and the appearance is indistinguishable from a squamous-celled carcinoma.

Digitized by Google

In some cases the epithelial cells were found to pierce the cartilage of the ear. Fischer thinks that this epithelial overgrowth is due to a directly chemiotactic influence of the Scharlach R. upon these cells. The oil becomes absorbed; epithelial cysts are formed, which ultimately become converted into cholesteatomatous masses.

The experimental investigation of mouse cancer has, as already mentioned, led to the discovery of many important new facts concerning this disease. It has also directed attention to certain features of malignant neoplasms as they are found in man, as, for example, the occurrence of spontaneous recovery from cancer. Before looking at some of the more recent and important discoveries in this field of research the earlier results may be briefly referred to.

In 1903 Jensen[7] published his epoch-making paper, in which he described a variety of cancer in mice that, in contradistinction to all other malignant epithelial growths, could be propagated with relative facility into other animals of the same species by a process of inoculation. In that paper he proved that the new tumour parenchyma, was derived solely from the epithelial cells introduced, in other words, the tumours were created by the cells introduced grafting on to the tissues of the new host.

Jensen's tumour is a subcutaneous adeno-carcinoma, homologous in every respect with carcinoma as it is met with in man, and is looked upon by virtually all pathologists as a true cancer. Lazarus Barlow dissents from this opinion. He does not consider it a true carcinoma but an endotheliomatous growth. What he means by such a designation is not exactly clear.

Jensen's tumour has now been for 5 years propagated from generation to generation, and still retains the characteristics of an adeno-carcinoma. The origin of the stroma of the tumour formed after subcutaneous inoculation has been investigated by various workers.

Bashford[8] describes it as being formed from the tissue of the host. In his opinion the stroma introduced at inoculation undergoes degeneration, and is entirely replaced by supporting structures derived entirely from the tissues of the host. With this opinion many, but not all, investigators agree.

Michaelis[9] and Apolant[10] were the first to observe in some animals the occurrence of spontaneous recovery after inoculation, a fact that was independently noted by Gaylord and Clowes,[11] who found that in quite a large percentage of cases the tumours which formed after inoculation underwent gradual resorption and disappeared.

The latter also showed that mice in which spontaneous recovery had occurred could not be successfully reinoculated, and claimed that the

Digitized by Google

serum obtained from the blood of such animals conferred a degree of immunity when injected into healthy mice, and furthermore promoted resorption when introduced into animals with growing tumours. Their conclusions regarding the active immunity present in animals after spontaneous recovery has been confirmed by other investigators. With reference to their claim that they were able to create a passive immunity by the injection of an anticancerous serum, the same unanimity of opinion does not exist. Haaland [12] failed to prepare any such serum.

No evidence of the occurrence of spontaneous infection has been absolutely proven to exist with Jensen's tumour or others similar to it, although Gaylord [13] reports the occurrence of upwards of 60 sporadic tumours during 3 years in animals kept in the same cage, the stock of mice in it being entirely renewed at least on one occasion. Borrel [14] has also succeeded in tracing 20 sporadic tumours to animals, all of which came from the same cage.

In view of the fact that the discovery of an animal possessing a sporadic tumour is of rare occurrence, these records are of considerable significance.

Jensen's tumour has been carefully examined for the presence of a living virus, and, as has been already mentioned, Gaylord, Calkins and Ford Robertson claim to have observed in it structures morphologically identical with certain spirochætæ.

Development of a Carcinoma into a Sarcoma.—It has already been mentioned how, after 5 years of passage through succeeding generations of mice, Jensen's tumour retained its original characteristics as a carcinoma solidum. Its histological characteristics remained unaltered. Working with tumours similar in nature, but mostly of a more virulent strain, Ehrlich and Apolant [15] have obtained a most remarkable result. They have three times found a carcinoma develop into a sarcoma after breeding true for 10, 14, and 68 transplantations respectively.

This change, once it had begun, required 3, 4, and 13 transplantations for its completion, and during this period the growth possessed the characters of a mixed tumour. Loeb has seen the same transformation happen in one generation. Ehrlich's explanation of this result is that the injected cancer cells so stimulate the connective tissue cells of the mouse that they develop into sarcomatous tissue.

Ehrlich succeeded in conferring a high degree of immunity to mice against virulent strains of carcinoma by injecting into them the pulp of a tumour of low virulence, the absorption of the tissue fragments producing active immunity, which persisted for a long time. This immunity was obtained in a couple of weeks and lasted for even months in from 66 to 94 per cent. of all the animals experimented

Digitized by Google

upon. He also found that when a virulent mouse carcinoma was injected into the rat the tumour grew and then underwent resorption and disappeared. These rats were thereafter immune to subsequent inoculation. Another most interesting result he obtained was that the growing tumour in the rat could not be reinoculated into other rats, although it could be with ease reinoculated into mice. His explanation of this is, that there is present in the portion of tumour inoculated a substance necessary for the growth of the tumour, and that the tumour ceases to grow in the rat when this substance is exhausted. As the body of the rat does not possess this substance, the tumour must of necessity remain sterile for all other rats, but will grow readily if reimplanted into a mouse, as there it can replenish its stock of this substance which is normally present in this animal. This explains the immunity of the rat and mouse in which inoculation fails. It is not antitoxic or due to antibodies; it is due to the absence of this X-substance "Wuchsstoffe" from the tissues of the animal inoculated. He names this variety of immunity "atreptic."

Ehrlich also succeeded in giving a marked degree of immunity against a virulent sarcoma to a large percentage of mice by inoculating them first with one of low virulence, which only took in 2 per cent. of cases injected, and more than this, he found mice immunised in the manner already described against a virulent carcinoma showed a diminished susceptibility to sarcoma, and to a transplantible mouse chondroma.

The more recent researches have been mainly in connection with this question of immunity, and the varying susceptibility in the same and different species, and the nature of the malignancy of the growth.

Gaylord and Clowes[17] have more recently returned to the consideration of the question of the spontaneous recovery with the implanted tumour in mice, and have collected also a number of cases of spontaneous recovery following the appearance of cancer in man. In their experience spontaneous cure takes place with mice successfully inoculated with Jensen's tumour in about 23 per cent. of all animals. Spontaneous recovery from carcinoma also has occurred occasionally in man.

The problem of immunity to cancer in mice has been studied in another aspect by G. Schöne.[18] His researches were undertaken to endeavour to obtain an immunising effect with other tissues than tumour substance. He used mouse embryo, mouse liver, and testis, embryo of chick, and human carcinoma. He injected an emulsion of these organs into healthy mice, repeating the injection from 4 to 8 times, over a period varying from 50 to 80 days, and then inoculated the animals with mouse carcinoma. He found that an immunity

Digitized by Google

against epithelial mouse tumour can be obtained by the repeated injection of a pulp derived from large embryos of mice.

The other tissues used showed a definite effect in the direction of immunity, which, however, might be due to the blood introduced, as this, as Bashford had previously shown, can, like embryo pulp, produce a certain degree of immunity.

This line of research is at present being further carried out by Bashford, Murray and Haaland of the Imperial Cancer Research Laboratories, and their results, to a large extent, bear out Schöne's contentions.

The varying degree of susceptibility of different stocks of mice to Ehrlich's mouse sarcoma has been investigated by Haaland.[12] Thus, after inoculation, Berlin mice gave 97 per cent. of successes. Those obtained from Christiania (strain A) gave 50 per cent. (strain B) being immune. The Hamburg mice gave a successful result in 24 per cent., the Copenhagen ones being immune. Blood serum from the resistent Copenhagen mice injected into the Berlin animals provided no protection against a subsequent inoculation of sarcoma. The serum appeared to contain no antibody for sarcoma. According to this observer the liability to cancer or sarcoma depends on a constitutional habit of the body—a diasthesis, rather, than on any sudden growth of embryonic cells.

Apolant's[19] most recent investigations have a most interesting relationship to the question of malignancy.

Prior to this work he held the view that the degree of apparent malignancy of a tumour was a question entirely of its rate of growth, and that the progressive apparent increase of malignancy was due to a progressive increasing rate of growth with each succeeding inoculation. He now holds that "the type of structure of the tumour is dependent upon biological changes in the organism of the animal host." He found experimentally that in one tumour which had for fifty generations reproduced the solid reticular type of carcinoma that it assumed an innocent adenomatous type in such animals as had been previously treated by the immunising methods of Ehrlich or Bashford, which of course do not in every case prevent tumour development. He found that in the cases where he commenced the immunising injections just after the inoculation of the tumour this developed with a structure of the usual malignant type; pieces inoculated at a later date, or secondary nodules, on the other hand were of the innocent adenomatous type. His work shows the exact counterpart of the development of malignant characteristics in a previously innocent tumour, due to loss of tissue resistance, and how by immunisation methods the lost tissue resistance may be restored, and a malignant tumour become an innocent one.

Digitized by Google

The Treatment of Cancer.—In the search for a remedy to influence the growth of malignant neoplasms in man the tendency of late has been to look for it in various animal products. The pancreatic ferment as originally suggested by Beard and M'Kenzie is still being used. The widespread advertisement which this treatment has received from the lay press is allowing its value to be ascertained sooner than is usually the case with such new remedies.

Bier,[20] who has already used the injection of blood as a treatment for non-union or delayed union of fractures, claims to have obtained benefit from injecting pig's blood into cancerous growths. When injected into a healthy individual this substance produces an inflammatory reaction but no destructive effect on the healthy tissue. When on the other hand it is injected into a cancerous mass it, according to Bier, produces marked improvement, by inducing a marked reaction, the pathological tissue being destroyed to a large extent, a dry necrosis occurring in some cases.

Von Leyden and Bergell [21] have tried the effect of various ferments on malignant tumours. They found that the pancreatic ferment produced only a local non-selective reaction. They especially experimented with a ferment obtained from the liver, and found that this produced an intense reaction which they claim was selective for the cancerous tissue. The practical therapeutical application of the remedy was, according to them, at present, however, unjustifiable.

The clinical significance of a diminution of free hydrochloric acid in the stomach contents has been studied recently by Copeman and Hake.[22] They examined the amount of physiologically active H.Cl. in the stomach of normal mice, and mice suffering from cancer experimentally produced, and found that in mice suffering from cancer there was an *increased* amount of H.Cl. present in the stomach wall and contents one hour after a test meal.

Their results they did not in any way consider as in any way invalidating those obtained by Moore, Wilson and Morton Palmer, who found in every instance of cancer in man, irrespective of wherever the growth was situated, there was an obvious diminution in the amount of physiologically active H.Cl. in the stomach content, the explanation of the apparent discrepancy being in the difference between cancer growth and cancer inception, cancer being, according to Copeman,[23] a local manifestation of a perverted body metabolism, an indication of which is afforded by the failure of normal H.Cl. secreting function in the mucous membrane of the stomach.

To prove their contention, as far as that is possible, it is obvious that the amount of H.Cl. in mice suffering from cancers of spontaneous origin will have to be examined. This they are at present doing.

Digitized by Google

From the brief summary which has been given it will be apparent that material progress is being made in the study of cancer, and that promise is held out of the ultimate discovery of remedies which will influence its growth beneficially to the host.

At the January (1908) meeting of the Pathological Society of Great Britain and Ireland several most interesting papers dealing with cancer were communicated. Abstracts of these are contained in the *Journal of Pathology and Bacteriology* for January 1908, in the record of the proceedings of the above Society.

The feature of the meeting referred to was the series of papers read by Dr. Bashford and his colleagues of the Imperial Cancer Research Laboratories.

Bashford, Murray and Haaland gave a communication dealing with the induction of specific resistance and of general enhanced susceptibility to inoculation of carcinoma and sarcoma in rats and mice. The paper dealt at the outset with their investigations of a transplantable squamous-celled carcinoma. From their numerous experiments they concluded that the active immunity established after spontaneous recovery from carcinoma following inoculation was much greater for the tumour inoculated than for other carcinomata.

They have as yet obtained no evidence that the absorption of carcinoma tissue increases the resistance to sarcoma to an extent surpassing that following the absorption of normal tissue. As regards the absorption of sarcoma, they found that the mice in which this occurred were protected against a subsequent successful inoculation with carcinomatous tissue to a very high degree. These results, they mention, as will be apparent from the earlier part of this abstract, are in opposition to those recorded by Ehrlich in certain respects.

When mice were injected with normal tissue it was found that skin alone was able to induce a nearly absolute degree of protection against squamous-celled carcinoma. The rest of the healthy tissues, used either collectively or individually, were devoid of this power. Growth of the tumour could be favoured by previously treating the animal with tissue of a strange species. By heating skin previous to inoculation the protection was converted into a condition favouring growth.

The process which occurred at the site of inoculation in association-ship with the histogenesis of the tumour formed after inoculation with carcinoma was described by Russell. His investigations confirmed the results originally obtained by Bashford. He studied the changes which occurred at the site of inoculation in immune mice. In animals resistent to carcinoma the stroma reaction failed to develop.

Haaland described his investigations into the development of a

Digitized by Google

spindle-celled sarcoma during the propagation of an adeno carcinoma of the mouse. This followed in the main the lines of Ehrlich and Apolant's work.

The important point brought out by the workers of the Imperial Cancer Research Laboratories is that when the tumour is carcinomatous in nature the stroma is formed anew from the tissues of each succeeding host, into which the growth is inoculated; but when it begins to alter in its character from carcinoma to sarcoma the stroma is now found to graft, and thenceforward it is found in each succeeding generation to behave in a similar manner, the stroma cells having the power of apparent limitless growth lead to the formation of a true spindle-celled sarcoma, capable of being transplanted, and giving rise to metastases. The importance of this contribution to the study of cancer is very great, as in it has been witnessed the origin of a true malignant neoplasm. The underlying cause of this change is not explained. The possibility of its being due to the transference of a virus from the living carcinoma cell to the stroma cell is mentioned but not looked upon favourably.

Haaland also investigated the occurrence of glycogen in mouse tumours. His conclusions are that no relationship exists between the amount of glycogen in the tumour cells and their rate of growth, and, so far as the occurrence of glycogen is concerned, the tumour tissue presents the same features as its normal histological analogue.

In the issue of the *Lancet* for January 25, 1908, 3 papers dealing with cancer fall to be noted. Ford Robertson[25] gives a further communication on the presence and significance of certain rod-shaped bodies in the cells of carcinomatous tumours. There are also 2 papers from the workers of the Liverpool Cancer Research Laboratories dealing with mouse carcinoma. Salvin Moore, in conjunction with Walker[26] and Barratt,[27] finds that Jensen and Ehrlich's mouse carcinomata may be exposed to an extremely low temperature, obtained by using liquid air, for twenty minutes to half an hour, and be successfully inoculated. They consider this fact as evidence in support of the presence of a living virus inside the cancer cell, which virus, like certain bacteria, can withstand exposure to an extremely low temperature.

BIBLIOGRAPHY.

1. Robertson and Young. *Lancet.* August 10, 1907.
2. Gaylord. *Journ. of Infect. Dis.* Vol. iv. No. 2. April 10, 1907.
3. Calkins. *Ibid.*
4. Porter and White. *Trans. of Amer. Surg. Ass.* Vol. xxv. p. 418. 1907.
5. Lazarus Barlow. *Journ. of Path. and Bact.* Vol. xii. No. 1, p. 132. 1907.

Digitized by Google

6. Fischer. *Münch. Med. Wochen.* Vol. liii. S. 2041. 1906.
7. Jensen. "Experimentelle Untersuch uber Krebs bei Maüsen. Central für Bact." Bd. 34. 1903.
8. Bashford. "Report of the Imperial Cancer Research Fund." Vol. ii. p. 30. London. 1905.
9. Michaelis. *Verhandlungen des Komitees fur Krebsforschung.* H. 3, p. 38. 1903-4.
10. Apolant. *Deut. Med. Wochensch.* No. 13. 1904.
11. Gaylord and Clowes. *Medical News.* January 14, 1905.
12. Haaland. *Nosk. Mag. f. Laeevidenskaben.* P. 105. 1907.
13. Gaylord. *Brit. Med. Journ.* Vol. ii. p. 1555. 1906.
14. Borrel. *Annales de l'Instit. Pasteur.* Vol. xvii. 1903.
15. Ehrlich and Apolant. *Berlin Klin. Wochen.* No. 28. 1905.
16. Ehrlich. *Arbeiten ad Kœnigl. Gesundheitensamt f. Exper. Ther. zu Frankfurt.* Am. Heft 1.
17. Gaylord and Clowes. *Surg. Gyne. and Obstet.* Vol. ii. No. 6, p. 633. June, 1906.
18. Schöne, G. *Münch. Med. Wochensch.* No. 51. 1906.
19. Apolant. *Münch. Med. Wochensch.* 54 Jahrg. No. 35, S. 1720. 1907.
20. Bier. *Deut. Med. Wochensch.* No. 27, S. 1161. 1907.
21. Von Leyden and Bergell. *Deut. Med. Wochensch.* No. 23, S. 913. 1907.
22. Copeman and Hake. *Journ. of Path. and Bact.* Vol. xii, p. 127. 1907.
23. Copeman. *Practitioner.* Vol. lxxix. No. 470, p. 185. 1907.
24. Muir, R. *Journ. of Path. and Bact.* Vol. xii. p. 287.
25. Ford Robertson. *Lancet.* Vol. i. No. 4, p. 225. 1908.
26. Salvin Moore and Walker. Vol. i. No. 4, p. 226. 1908.
27. Salvin Moore and Barratt. Vol. i. No. 4, p. 227. 1908.

ANÆSTHETICS IN 1907.

By D. C. A. M'ALLUM, M.B.,

Anæsthetist, Royal Hospital for Sick Children; Anæsthetist, Chalmers Hospital; Instructor in Anæsthetics, Royal Infirmary.

The Case of the Patient during Serious Abdominal Operations.—Bellamy Gardner (*British Medical Journal*, July 6, 1907), in a practical and interesting article, discusses the various precautions necessary to diminish, as far as possible, the risks of abdominal surgery. He strongly recommends the internal administration of liq. strychnini m. 5 thrice daily for one week previously, in order to attain a satisfactory vaso-motor tone during operation. He is of opinion that ether has a more powerful effect than chloroform in blunting, and in some cases subverting, the transmission of nerve stimuli. In cases where the surgical stimuli produce reflex laryngeal

Digitized by Google

spasm and deficient oxygenation of the blood he advises the hypodermic injection of ¼-gr. of morphine during the operation.

Recent Research in Anæsthetics.—In a leading article the *British Medical Journal*, April 20, 1907, gives a review of some recent investigations into questions of the highest interest. The fullest report is that given to Buckmaster and Gardner's experiments on the relation into which inhaled chloroform enters with the blood—a question which had also been investigated and reported on by the Special Chloroform Committee of the British Medical Association. Two points of the greatest practical importance seem to be established by Buckmaster and Gardner—(1) That the margin between the amount of chloroform in the blood necessary to establish anæsthesia and that which can produce death is very narrow; (2) that the actual amount of chloroform required to induce anæsthesia is far less with a slow induction, and that a rapid administration, like the administration of a high percentage vapour, produces a surplus of chloroform in the blood which may easily affect the central nervous system and bring about a lethal result. Other reports reviewed in the article are those of Alcock on the action of chloroform on living tissues, and Embley on the pharmacology of ethyl-chloride. Buckmaster and Gardner's experiments are also discussed in a leading article in the *Lancet* of May 11, 1907, and by Waller in *The Medical Times* and *Hospital Gazette* of August 17, 1907.

Resuscitation after Death from Anæsthetics and Asphyxia.—Crile and Dolley (*Journ. Experiment. Med.*) report upon their researches on this subject as carried out on dogs. The following are the more important of their conclusions based upon their own and other observations:—(1) Animals after death from chloroform, ether, or asphyxia, up to 5 minutes were readily resuscitated; up to 10 minutes occasional failure occurred; beyond 10 minutes resuscitation was rarely successful. (2) After death from chloroform and ether animals were more readily resuscitated than after death from asphyxia. (3) Resuscitation, if successful, occurred within 1 minute after injection of adrenalin in the majority of instances; it rarely occurred after a greater interval than 3 minutes. (4) The greatest difficulty to be overcome was clotting, the probability of which increased in direct ratio with the lapse of time after death. (5) The probable success of resuscitation is greater in inverse relation to the lapse of time after death.

The Use of Adrenalin during Ether Anæsthesia.—Venable (*Virginia Medical Monthly*) describes his experience with the use of adrenalin in conjunction with ether. In a case of ether anæsthesia where the secretion of mucus was profuse, causing such a degree of

Digitized by Google

obstruction that at times the respiration ceased, the pharynx was mopped out with a 5 per cent. solution of adrenalin with marked benefit; subsequently a few drops of the solution were poured on to the ether cone, with the result that anæsthesia was carried out quite successfully. Venable used adrenalin in this manner in a series of cases with excellent results. The method is to spray on the ether cone a 25 per cent. solution of the standard 1 per 1000 solution of adrenalin at intervals of 3 to 6 minutes, requiring about half an ounce of the solution every half-hour. It is claimed that a more regular ether effect is obtained; that the pulse is steadier and slower than with ether alone; that the respirations are quiet and regular and the secretion of mucus much lessened. The after-effects were uniformly good, vomiting being rare. Venable concludes that with the lessened secretion there is better pulmonary aëration, less ether is required to produce and keep up anæsthesia, and there is less chance of subsequent pneumonia.

Delayed Chloroform Poisoning.—Leonard Guthrie (*Clinical Journal*, June 12, 1907), gives a full review to date of this vexed question. The article was read before the Society of Anæsthetists, and though presenting nothing new is well worth careful study as an excellent statement of the subject.

The author adheres to his previously expressed views that these cases are due to a pre-existing fatty condition of the liver, and advances various arguments in support. He quotes Langemann's decision to the effect that while a certain amount of chloroform must be in the circulation before fatty degeneration can be produced, yet this quantity is always present when sufficient chloroform has been given to produce narcosis. He points out that if this conclusion be correct then obviously every chloroform narcosis must be followed by extensive fatty changes which are in the great majority of cases harmless, otherwise death would be an invariable result. Therefore, when death does occur, there must be some other underlying factor, this in the author's opinion being most probably a liver already on the verge of inadequacy owing to the excess of fat in its cells. On such a liver the anæsthetic imposes a breaking strain that it cannot stand. He further suggests that the varying susceptibility of animals to the influence of chloroform may depend on the amount of fat already stored in the liver at the time of anæsthesia.

Status Lymphaticus in Relation to General Anæsthesia.—A paper on this important subject was read by M'Cardie at the meeting of the Society of Anæsthetists on 6th December. Referring to the history of the subject, the author gave the credit to Paltauf of having correctly

Digitized by Google

recognised the cause of many hitherto inexplicable cases of death under chloroform. The general post-mortem results, it was pointed out, are tolerably uniform and remarkable, consisting of enlarged spleen, hypertrophy of lymphatic tissue in various regions, and a dilated heart with extremely flaccid cardiac muscle. Out of 30 cases of status lymphaticus deaths, during or after anæsthetics, which he had investigated, M'Cardie found that in 17 cases chloroform, in 6 ether, in 5 a chloroform-ether mixture, and in 2 nitrous oxide had been used.

He could not find any record of death under ethyl-chloride, but records of deaths under morphine and local anæsthetics were given. The average age was 16 years, the youngest fatality being at the age of 6 months and the oldest at 55 years. The practical importance of recognition of the condition and the signs for diagnosis were dealt with.

A fatal case presenting points of interest is recorded in the *Lancet*, December 21, 1907, by Rubra and Brown.

The reflexes, it is stated, were present though the pulse had disappeared, and deep breathing continued for one and a half minutes after the heart had apparently ceased to beat. At the necropsy an enlarged thymus weighing 1½ ounces was found. With regard to the important question of the recognition of these subjects, a graphic and possibly somewhat overdrawn description is given by Vintrus (*Lancet*, May 11, 1907). It would almost seem, however, that the physical conditions so fully described by the author are not those of the status lymphaticus as generally understood here.

Picrotoxin as a Preventative of Post-Chloroform Sickness.—Paterson (*Lancet*, September 14, 1907) advocates the hypodermic use of picrotoxin as a generally reliable preventative of vomiting after administration of chloroform. Ether is not mentioned in the communication.

No rationale of the action is offered; but the author, after a series of cases with and without picrotoxin, definitely states that it is a reliable preventative of chloroform sickness. Twenty minims of a 0.2 per cent. solution are injected as soon as possible after the anæsthetic is withdrawn; in the case of children the dose varies—5 minims for a child of 4 years being sufficient. Should vomiting follow the first injection, a second is given of half the amount, which, it is stated, never fails to arrest further sickness.

No untoward results are mentioned, and the procedure is certainly worth extended trial.

Digitized by Google

DISEASES OF THE EAR AND THROAT.

By HENRY PETERKIN, M.B.,
Assistant Surgeon, Aberdeen Royal Infirmary.

A New Syndrome and its Aural Complications.

Ramsay Hunt (*Archives of Otology*, August 1907) describes a symptom-complex depending upon a specific herpetic inflammation of the geniculate ganglion. The simplest expression of this inflammation is a herpes zoster of the tympanum, auditory canal and concha. The close relationship of the facial nerve and the auditory nerve leads, however, to frequent complications, namely, peripheral facial palsy, tinnitus aurium, deafness, and symptoms of Ménière's disease.

This herpetic inflammation of the geniculate ganglion presents four clinical types.

1. *Herpes Auricularis, or Herpes Oticus.*—Under this heading Hunt does not include the cases where herpes is present on the anterior and posterior surfaces of the auricle, but only a well-defined type in which the eruption is distributed over the concha, the external auditory canal and the tympanic membrane. The preherpetic pains, which are referred to the depths of the ear, to the external auditory canal, and to the auricle, may be very severe. They may radiate into the branches of the trigeminal nerve, and into the mastoid, occipital, and cervical regions. In many cases the auricle becomes red, swollen and tender, and the external auditory canal may be occluded. The eruption usually appears on the third or fourth day. It is sometimes confined to the tympanic membrane. It may be bilateral. Post-herpetic otalgias are often severe and persistent.

2. *Herpes Auricularis, Facialis, or Occipito-Collaris with Facial Palsy.*—Here the inflammation has spread to the facial trunk. The palsy may appear with the eruption or may be delayed for a week or more. Possibly a succession of inflammatory changes taking place in the ganglion may account for the palsy appearing at a later period. The palsy in all Hunt's cases was complete. Some of these palsies last only a few days; many of them clear up within a month; but more severe types do occur. In many of the cases the sense of taste on the anterior two-thirds of the tongue was affected. These facial palsies may occur with herpes occipito-collaris and herpes facialis as well as with herpes auricularis. Hunt considers these to be due to a simultaneous occurrence of inflammatory changes in a series of ganglia.

3. *Herpes Auricularis, Facialis, or Occipito-Collaris, with Facial Palsy and Hypoacousis.*—Here impairment of hearing is added to the other

Digitized by Google

symptoms, and is explained by the extension of inflammatory products to the eighth nerve. If this symptom is slight and passing, it is probably due to œdema; if more severe, to direct involvement of the nerve in the inflammatory process.

4. *Herpes Auricularis, Facialis, or Occipito-Collaris with Facial Palsy, Deafness, and Symptoms of Ménière's Disease.*—This is the most severe form of the syndrome, and manifests tinnitus aurium, disturbances of equilibrium, nystagmus, vomiting and labyrinthine vertigo. Hunt is inclined to think that these symptoms may be due to invasion of the ganglia of the acoustic nerve by the herpetic inflammation.

The diagnosis of these herpetic inflammations of the geniculate ganglion should not give rise to difficulty, except perhaps when the case is first seen after the disappearance of the eruption. Even then the history of the pains and the presence of pigmented scars may render it possible.

The prognosis is generally favourable. Tinnitus and deafness in the Ménière's type may, however, persist, as also signs of the facial palsy. In old people otalgias may last for long periods.

Hunt advises the application of leeches to the mastoid region in all cases, in the hope that this may prevent serious inflammatory invasion of the nerve trunks.

The Dressing of the Radical Mastoid Operation.

Roy (*Journal of Laryngology, &c.*, November, 1907) recommends the use of vaseline oil for the dressing after the radical mastoid operation.

His technique is as follows:—The radical operation is done as usual, the post-auricular wound being sutured. At the operation the cavity is dressed with iodoform gauze. About the sixth day this is removed, the wound cleansed with peroxide of hydrogen, and then dried. "Little strips of plain gauze, about 1½ cm. wide and 6 cm. long, are dipped in vaseline oil; one end is introduced into the drum, and the other end remains outside the wound. The whole cavity must be carefully carpeted with this gauze, and the strips should overlap each other slightly. Upon this first layer cotton is applied sufficiently saturated with liquid vaseline to be well packed in. In doing this packing, which must be fairly tight, it is necessary not to leave any dead spaces, so that to this end it is better to use little pledgets of cotton. A great deal of care must be given to the external meatus and to the operative opening of the canal. It must be packed rather tightly, on the one hand to prevent any subsequent narrowing, and on the other hand to maintain the apposition of the flaps. When the cavity is well filled

Digitized by Google

the dressing is finished with dry cotton and a bandage." At first dressing is done every day, later every second day. The dressing should be removed slowly after moistening it with oil or peroxide of hydrogen, the wound cleansed with peroxide of hydrogen, carefully dried and any stray ends of gauze removed.

For this method Roy claims the following advantages:—"With vaseline oil the surgeon is able, according to his wish, to allow the wound to close in by merely packing more or less tightly; or, on the other hand, to preserve the shape of the cavity such as it was immediately after operation." The oil protects the granulations from infection, and they do not tend to exuberance or suppuration. The epidermis is solid and extends quickly. No pain is felt during the dressing.

Closure of Septal Perforations.

Haseltine (*Laryngoscope*, October 1907) describes an operation for the closure of septal perforations which he employed in 5 cases, in 4 of them with perfect success.

For a successful operation on a septal perforation Haseltine considers that there are 4 requirements, namely:—

(1) That the blood supply of the flaps should be conserved;

(2) That a double flap for the aperture with an intact membrane under every seam should be provided;

(3) That no denuded cartilage should be left, all denuded areas being of bone or vascular tissue;

(4) That few stitches should be required, that they should be easily inserted, and that they should produce no tension.

The technique is as follows:—By means of scalpel or single-tine swivel knife, the margins of the perforation are pared, V-shaped sections being removed above and below. On one side of the septum a vertical incision is made in the septum mobile. This incision should be made as far forward as possible, and should extend from the roof to the floor of the nose. Through this incision a flap, including some of the underlying cellular tissue, is raised, which extends backward to and entirely round the perforation. On the opposite side of the septum the muco-perichondrium "is elevated entirely around the perforation, and the bone or cartilage of its immediate border is removed. The swivel knife, bone forceps and chisel may all be useful here. The muco-periosteum of the distal side back of the opening is now elevated as for an extensive bony resection. This elevation must extend to the roof and into the nasal floor. A vertical curved incision, with its concavity forward, is made through the distal membrane far enough behind the aperture to produce a flap wider than its antero-posterior

Digitized by Google

diameter. This flap must be loosened until it can be drawn forward and sutured to the anterior margin on the same side, or better still, overlapped without sutures. The proximal flap is slid backward to meet the posterior margin if possible, but not far enough to uncover the juncture of the opposite membranes. Special care must be directed to the upper apex where the sliding of the flaps upon each other is necessarily slight. The flaps are held in position and gently pressed together by delicate pads and suitable packing."

In this operation each seam rests upon a connective tissue support, and is not intersected by another. The flaps have a satisfactory blood supply. Few sutures are necessary, and their insertion is easy.

The perforations successfully dealt with were as follows:—In the first case a narrow perforation following a sawing operation 3 years before, in the second case a post-operative perforation 6 mm. in diameter, in the third case an idiopathic perforation "large enough to admit the end of my index finger as far as the first joint," and in the fourth case a perforation which involved almost the whole of the cartilaginous septum.

Nasal Cough.

After an expression of disapproval of the diagnosis of "nervous cough," Lermoyez (*Annales des Maladies de l'Oreille, &c.*, September 1907) relates the case of a woman who had coughed for 10 or 11 years. She had consulted many medical men, and her condition was variously diagnosed as throat cough, rheumatic cough, and nervous cough, and corresponding remedies applied, always, however, without benefit. Lermoyez discovered some small nasal polypi in one nasal fossa, and when these were removed the cough ceased, and had not returned more than a year after operation.

Lermoyez points out that when the mucous membrane of the anterior part of the nose is irritated, an attack of cough occurs only in about 1 per cent. of healthy subjects. The nasal cough is always, or almost always, pathological. For its production certain conditions are necessary, namely, a special excitability of the organism, a hyperæsthesia of the nasal mucosa, and a permanent or repeated local cause of irritation. This local cause may be extrinsic as in hay fever, or intrinsic as in nasal polypus or other nasal lesion. To arrest the cough Lermoyez thinks it more logical to deal with this exciting cause than to try to modify the organism so that it does not respond to nasal stimuli.

The special features of the nasal cough are 4 in number. It is a dry cough, little plugs of mucus at most being expelled. It is a con-

Digitized by Google

vulsive cough, increasing in intensity up to the end of the seizure. It is a progressive cough, always becoming worse as time goes on, and not tending to spontaneous recovery. Finally, it is an irresistible cough. A vagal cough may be disciplined, a trigeminal cough can not.

Several features tend to deceive one as to the origin of the cough. The patient feels that his cough is brought on by a tickling in the larynx, and experiences no irritation in the nose. This sensation in the larynx is, however, a feature of every cough whatever its origin. Again, laryngoscopic examination reveals congestion of the larynx, and especially of the inter-arytenoid region. This, however, is the result, and not the cause, of the cough. Thirdly, the examination of the nose may not be conclusive. Sometimes no abnormality is obvious in the nose. The use of the probe, however, may reveal an area, irritation of which produces the characteristic cough. The effect of the application of cocaine to such an area may confirm the impression that it is the origin of the cough.

New Books and New Editions.

Arterial Hypertonus, Sclerosis, and Blood-Pressure. By WILLIAM RUSSELL, M.D., F.R.C.P.Edin. Pp. 194. Edinburgh and London: William Green & Sons. Price 7s. 6d. nett.

IN this volume we are presented with a most important contribution to the discussion of various problems of the greatest clinical interest. Owing partly to imperfect knowledge of physics, partly to looking at truth from one side only, and, in a measure, also to confused thinking, the views of many writers on blood-pressure are hard to reconcile with one another, and hard to understand. Dr. Russell sets himself the task, in the first place, of giving clear definitions of terms. The word hypertonus (introduced first by him) is applied to a physiological condition—the increased tonicity of the arterial wall which is present, for example, during digestion and during physical effort. The wall becomes somewhat thicker and its diameter reduced, through the contraction of the middle coat. *Hypertonic contraction* he defines as exceeding the physiological limit, and implying not a merely local strictly limited constriction, but an effect which is wider and more generalised. *Arterial spasm* again is a strictly localised constriction. He shows how hypertonus increases blood-pressure in the vessels on the cardiac side of the narrowing, and in the heart itself. "It is necessary to lay stress upon the

Digitized by Google

contention that to the clinician the all-important factor in questions of blood-pressure centres in the heart. When the vessels constrict in one region the heart may be so powerful that the danger is vessel rupture in another; on the other hand, the heart may be so feeble that there is imminent risk of syncope."

After a brief but clear review of the most important arterial changes (atheroma, obliterative endarteritis, calcareous infiltration of the tunica media, arterio-sclerosis), Dr. Russell shows how necessary it is to remember that sclerosed, thickened arteries have still the power of contraction in hypertonus. This has been very generally lost sight of, the sclerosed vessels being regarded as rigid tubes. Even arteries that appear to be atheromatous, that is, in which thickened segments can be felt, apparently calcareous, are, in our author's experience, sometimes capable of such relaxation that the segmented character disappears; the conclusion here is that there have been "irregular thickenings of the intima plus hypertonic contraction." In Chapter V. the main thesis is that the composition of the blood has a paramount influence in causing hypertonic contraction, Dr. Russell leaning to the nugogenic theory, and giving various good reasons for his views. Even small quantities of toxic substances such as are readily formed in the intestines in meat digestion, or such as nicotine from one cigarette, may produce arterial constriction.

Perhaps the most important sections of the book are those that deal with estimation of blood-pressure. Dr. Russell prefers Oliver's modification of the Riva-Rocci instrument. He discusses very fully the influences that affect the readings of the hæmomanometer, and proves that the state of the arterial wall has been too often ignored, or at least minimised. Hence, in conditions with a failing senile heart, but with sclerosed arteries, we may have very high "blood-pressure" records. The instrument is very useful for comparative readings in the same patient at different times and under different conditions, but only as an aid to the finger. One is glad to find this sound physician placing so great stress on the education of the tactile sense in judging the radial pulse. Only by this means can we distinguish the actual blood-pressure in cases of thickened arteries, but it must be admitted such attempts are often only approximate. The importance of the vessel wall is clearly shown by a scheme of the circulation in which arteries of different thickness are represented by india-rubber tubes; the thicker the tube of course the greater the pressure required to obliterate the flow through it. One of the most interesting chapters deals with the influence of the alimentary system in causing arterial hypertonus and sclerosis, while perhaps too great

Digitized by Google

importance is attached to constipation as a cause of disease. There is much to be said for the view that the products of carbohydrate digestion are much more favourable to keeping the arteries soft than are those formed in digestion of proteids. But the personal factor must outweigh all others here. If digestion is excellent and elimination complete, a big feeder and moderate drinker may get off scot-free for many years, while the teetotaler, if dyspeptic, may show early arterial degeneration. We can only refer our readers to other sections of the greatest practical interest dealing with interstitial nephritis, with angina pectoris, and with the very difficult subject of contraction of the cerebral arteries, all showing careful thinking and valuable deductions. The book is indeed, as a whole, likely to be of great service to practical physicians. It is well illustrated, especially with sections of arteries, and among the seventy-nine cases given with more or less fulness there are many of the greatest interest. The publishers have spared no effort in issuing this volume in a handsome form.

Minor Medicine. A Treatise on the Nature and Treatment of Common Ailments. By WALTER ESSEX WINTER, M.D., B.S. (Lond.), F.R.C.P., F.R.C.S. Pp. 275. London: Sidney Appleton. 1907. Price 6s. nett.

THIS book treats of symptoms and of minor ailments, many of which are of every-day occurrence in general practice, and some of them are a source of considerable trouble, *e.g.*, chilblains, cracks in the skin, stitch in the side, warts, cephalalgia, hæmorrhoids, enuresis, &c., &c.

In some of the articles the treatment is purely symptomatic, but in most there is a discussion of the cause and the underlying pathological condition.

The general practitioner will find in this book many useful hints. It should prove specially useful to those who have recently begun practice, because in the medical curriculum the minor ailments, which are so common, receive less attention than more serious maladies.

All Editorial Communications—including BOOKS for REVIEW and EXCHANGE JOURNALS—are to be addressed to THE EDITORS, *7 Manor Place, Edinburgh,* AND NOT TO 43 CASTLE STREET.

Business Communications to MESSRS. WILLIAM GREEN & SONS, *2 St. Giles Street.*

Digitized by Google

THE SCOTTISH MEDICAL AND SURGICAL JOURNAL.

Editorial Notes and News.

Vacant Chairs.

No further candidates have come forward to add to Mr. Sinclair's difficulties in filling the Chair of Clinical Surgery in Edinburgh. From the testimonials of the candidates it is more than ever evident how abundant is the choice, surgeons from both hemispheres testifying in the most cordial terms to the merits of the different candidates.

In the Chair of Medicine in Glasgow many names are mentioned, among them Drs. M'Vail and Lindsay Steven of Glasgow, George Gibson of Edinburgh, and Hawthorne of London, the last an old assistant of Sir William Gairdner's.

Mr. Sinclair was, we hear, relieved to hear that in St. Andrews the nomination to the Chair lies not with the Crown but with the University Court. Probably Dr. Fraser Harris, who has for some years, as Lecturer on the Institutes of Medicine, done all the *medical* teaching which has been done in St. Andrews, will receive a well-deserved promotion.

The New Superintendent of Morningside.

On 20th February the managers of Morningside Asylum elected Dr. George M. Robertson to the post vacated by Dr. Clouston. Dr. Robertson, after ending his training under Dr. Clouston in Morningside, was superintendent first in Murthly and more lately in the Stirling District Asylum. As Physician-Superintendent there he has had an experience in the teaching of psychiatry which will stand him in good stead in the teaching of the University students at Morningside.

A Doctor in the "'15."

We have received an interesting brochure by Mr. A. P. Stevenson of Dundee, in which he relates practically all that is known of Patrick Blair, Surgeon

Digitized by Google

Apothecary, who in 1706 dissected at Dundee the first elephant anatomised in the British Isles and published an elaborate account of it in the *Philosophical Transactions*, profusely illustrated from blocks made in Dundee. His subsequent history was eventful, for he was condemned to death for his share in the "'15," and was only at the last moment reprieved by the exertions of his learned friends in London. He practised for a time in London, and then at Boston in Lincoln, where he worked at a pharmaco-botanologia—an alphabetical dissertation on British plants—which had reached the letter H when he died about 1728. He records many interesting details, including the prompt cure of an acute mania by thrusting the man blindfold under a waterfall 20 feet high and keeping him there as long as his strength would permit. He woke sane after a sleep of 29 hours. While the Royal Society esteemed Blair's work sufficiently to make him a Fellow, Dundee esteemed the elephant so much that it built a special museum to contain it, but all traces of both elephant and museum have now disappeared. Mr. Stevenson is to be congratulated on his research, which is printed in the *Proceedings of the Botanical Society of Edinburgh*.

Royal College of Physicians of Edinburgh.

A QUARTERLY MEETING of the Royal College of Physicians of Edinburgh was held on Tuesday, February 4, 1908, Dr. Underhill (President) in the chair. Theodore Charles Mackenzie, M.B., was introduced, and took his seat as a Fellow of the College. Patrick Hehir, M.D., Lansdowne, India, and Harold Sherman Ballantyne, M.B., Dalkeith, were admitted by ballot to the Fellowship of the College; and Lindsay Stephen Milne, M.B., Ch.B., Montrose, was admitted by ballot to the membership of the College after examination.

The Registrar reported that since the last quarterly meeting 27 persons had obtained the licence of the College by examination.

Smithsonian Institution. Hodgkins Fund Prize.

IN October 1891 Thomas George Hodgkins, Esquire, of Setauket, New York, made a donation to the Smithsonian Institution, the income from a part of which was to be devoted to "the increase and diffusion of more exact knowledge in regard to the nature and properties of atmospheric air in connection with the welfare of man."

In the furtherance of the donor's wishes, the Smithsonian Institution has from time to time offered prizes, awarded medals, made grants for investigations, and issued publications.

Digitized by Google

In connection with the approaching International Congress on Tuberculosis, which will be held in Washington, September 21 to October 12, 1908, a prize of $1,500.00 is offered for the best treatise that may be submitted to that Congress "On the Relation of Atmospheric Air to Tuberculosis."

The treatise may be written in English, French, German, Spanish or Italian. They will be examined and the prize awarded by a committee appointed by the secretary of the Smithsonian Institution, in conjunction with the officers of the International Congress on Tuberculosis.

The right is reserved to award no prize if in the judgment of the committee no contribution is offered of sufficient merit to warrant such action.

The Smithsonian Institution reserves the right to publish the treatise to which the prize is awarded.

Further information, if desired by persons intending to become competitors, will be furnished on application to Charles D. Walcott, Secretary, Smithsonian Institution.

Opsonins in Song.

At the dinner of the Edinburgh Branch of the British Medical Association Dr. Charles Kennedy delighted the company with the following original song:—

Tune—"The Millwheel."

"My opsonic index is negative,
I greatly fear I must die,
I often require a restorative
Of Scotch or Irish or Rye;
My leucocytes are not digestive
Of staphylococci.

I've a boil no bigger than half-a-crown,
Though it feels as big as a score,
It makes me sit up when I try to sit down,
It is so devilish sore;
It's hotter than hell, and I've tried to drown
My sorrows in nips galore.

A bacteriologist came one day
With sterilised lancet and all,
He pricked it, and he carried away
Some matter from that boil;
A little matter, I heard him say,
To grow on another soil.

Digitized by Google

He planted it in a jelly dish,
  It flourished under his eye;
Said he, when I asked him, 'What is this?'
  'They're staphylococci!
Yes, yes!' he murmured, 'What more can one wish
Than staphylococci!'

My germs, in strange serum, with nicely-washed leu-
  Cocytes he now incubated,
And with oil immersion lens brought into view
  The fact that each polymorph fed
On three or four cocci, and so one drew
  An index opsonic, he said.

Then serum from me, for his leucos he asked,
  A meal of my germs to prepare;
But they smiled at him, as in sunshine they basked,
  For not one opsonin was there!
The cocci smiled blandly as polymorphs passed
  With stolid, amœboid stare!

With the ghost of a chuckle, he gazed on the sight,
  Then took up a Pravas syringe
To dose me with cocci cream cooked à la Wright,
  And told me, my welfare would hinge
On whether my leucocytes still took fright
  At cocci of golden tinge.

My wretched opsonins will not revive!
  No matter how often we try;
The boil is much better, but can I survive
  If the man with the cocci reply,
'You can only get well, if your leucocytes thrive
  On staphylococci!'

And now, I could do with a drop of Scotch,
  I like it much better than hy-
Podermic injections of coccal hotch-potch,
  And fain with my boil would I fly
To regions obscure, where there's no one to tort-
  Ure me with pickled cocci."

Digitized by Google

NOTES ON IMMUNITY TO DISEASE.[1]

By W. F. HARVEY, M.A., M.B., C.M., D.P.H., CAPT. I.M.S.,
and
ANDERSON M'KENDRICK, M.B., Ch.B., CAPT. I.M.S.

PROFESSOR CHIENE AND GENTLEMEN,—You will naturally expect me to speak this morning on some subject specially connected with my own work. If I were to do so, then I should speak to you on the subject of rabies, on the methods by which this terrible disease are prevented, and on the principles and details of the treatment. I might at the same time have paid my humble tribute to the genius of the great Pasteur. But I have chosen instead a more general subject, which I think should interest you more. For rabies is a disease which, thanks to the vigorous policy of Mr. Walter Long, was stamped out of this country some few years ago. It is therefore a disease which no present Edinburgh student is likely to have seen, nor is ever likely to see in this country. However interesting, therefore, the subject may be to me, I should only be wasting your time in taking that as my text. I take instead, in a very general way, the subject of the theory of immunity, and applications of that theory to practice, so far as such a very large subject can be dealt with in the time at my disposal. With this subject the names of Pasteur and his disciples are very closely connected, but the applications to which I shall chiefly refer are more particularly connected with the name of Sir A. E. Wright.

In the ten years which have elapsed since I sat on these benches, the study of the subject of immunity to disease has made very rapid and important progress. And alongside of our better understanding of the processes involved in immunity, the applications of theory to practice have progressed in a correspondingly remarkable degree. As a student I was duly instructed in the fascinating doctrines of Metchnikoff and the French school of bacteriologists. According to them, as you know, the greatest importance was ascribed to the *rôle* of the leucocyte in the protection of the animal organism from the invasion of noxious germs. The leucocyte advances towards such germs, and by means of its amœboid movements takes them up into itself and finally con-

[1] A lecture delivered by Capt. Harvey, at the request of Professor Chiene, to the class of Surgery.

Digitized by Google

sumes them. The leucocytes are the great protectors of the animal organism. In regard to his liability to disease a man is a function of his leucocytes. On this theory the process of infection by disease is pictured as follows:—

The leucocytes attack the organisms which have gained entrance to the body through one or other of the surfaces, internal or external. If the leucocytes are unable to dispose of the germs introduced, then disease processes set in. The so-called incubation period represents the time during which the first struggle for supremacy takes place between body cell and bacterial cell. If now no continued attempt to gain the victory is made by the body protectors, then the disease runs its course unchecked and may terminate in death. If, however, the leucocytes collect their scattered forces and overcome the invading microbes, recovery ensues. In this latter case the leucocytes remain actually or potentially stronger than they were before the attack, and are consequently better able to resist any future attack by that same microbe. This constitutes the specific immunity to a second attack of a given disease. This is roughly the phagocytic theory of immunity as first enunciated. The theory was, however, in its first form, much more an explanation of the means of defence against bacterial invasion than an explanation of the acquisition of immunity. Gradually there arose a school which, with Ehrlich at its head, has insisted upon the very great, and, in their eyes, the primary importance of the body fluids in regard to preservation against the attacks of disease-producing germs. The theory of immunity so promulgated has received the name of the humoral theory in contradistinction to the phagocytic or cellular theory. By this, the German school, it was shown that in individuals who had recovered from disease, the blood-serum produced very striking effects upon the causal organism. These effects may be summed up as consisting of, firstly, agglomeration, and, secondly, actual solution of the microbes. The properties of the substances in an immune serum which gave rise to these effects were carefully investigated and special names were given to those which were considered to have caused special effects. Thus we have agglutinins and precipitins producing agglomerating effects, and bacteriolysins producing dissolving or digestive effects. What these substances exactly are is still matter of debate. "Are they ferments, or are they not ferments?" is one question among many, which can only

Digitized by Google

be answered when something more than chemists and physiologists now know is ascertained regarding the intimate nature of ferment and other like chemical actions. There is, however, quite a distinct tendency now to deprecate the multiplication of special names for what, after all, may be only different effects of the action of one, or more likely two, substances under different conditions. Nevertheless, in the present state of our actual knowledge, and, thanks to the idiosyncrasies of different workers, we are unfortunately compelled to talk of agglutinins, precipitins, amboceptors, complements, antitoxins, antiagglutinins, antiamboceptors, opsonins, antiopsonins, antianaphylactins, anti-aggressins, and so on, as if these were all separate substances in serum. Some day, unification and simplicity may emerge from this chaos.

The greatest merit of Ehrlich's theory of immunity probably lies in the insistence on the importance of other body cells besides leucocytes in the production of immunity, and in directing attention to an explanation of the highly specific nature of serum reactions. The "side chain theory," as it is called, has a specially fascinating side to it also, in respect to the way in which it professes to connect up the processes concerned in immunity with a physiological theory of cell metabolism. Special chemical atomic groups in the protoplasmic molecule are regarded as having special affinities for special nutritive stuffs. The nutrition of the cell consists in the taking up of these stuffs by the special atomic groups, and the further building of them into the protoplasmic structure. Now, bacterial substance is regarded as being closely allied to food substance, and bacterial substance, therefore, also finds affinities amongst these atom groups. But the groups were only intended to take up substances derived from other sources than bacteria. Moreover, the bacterial substances in many cases exert a peculiarly harmful effect upon the protoplasm of the cell —a toxic effect. Thus we may have the atomic groups which were intended to cater for the nutrition of the cell occupied by foreign non-nutritive and even actually toxic substances. The cell is injured by these, but its resources are not necessarily exhausted. The cell, or others like it, are capable of producing new atomic groups to replace those thus occupied, and, in the theory we are considering, it is supposed that these new groups are produced not only in sufficient numbers to carry on the nutrition of the cells, but in excess of requirements. This, as Ehrlich explains, is

Digitized by Google

quite in accordance with what we know of regenerative processes generally. The excess comes to be more than the cell can carry, and so surplus atomic groups are thrown off to become the antitoxins, or, more generally, antibodies to specific germ products, or to the actual germs themselves. This excessive production of free atom groups, which represent either antitoxin, bacteriolysin, or other antibody, tends to effect a clearance from the body of the invading organism. The leucocytes, of course, as body cells, are not excluded from this process of antibody production, and, indeed, research has shown that leucocytes are perhaps more specially concerned in it than any other cell. If the micro-organism is disposed of, recovery ensues. Ehrlich supposes that excessive production of free receptors, as they are called, continues even after recovery, and that immunity to future attacks of the same disease depends upon the actual presence of these antagonistic substances, or, at all events, upon the ready production of them by cells on receiving an appropriate stimulus. I ought to say that the anchoring of a noxious substance and the production of toxic effect are regarded by Ehrlich as quite distinct, and resulting from the action of different bacterial atomic groups. Some bacterial substances also he regards as possessing anchor groups, but no toxic groups, and yet others as having no anchor groups at all. Such substances can of course do little or no harm, and it is on such grounds as these that Ehrlich endeavours to explain the avirulence of the majority of bacterial cells. But here, as in the case of many other theories, we may say—as I have often heard it said from this chair—the strength of a chain depends solely upon the strength of the weakest link in it. The theory, although it has done a very great deal to stimulate research, contains some links of doubtful strength. There are still other theories on this subject. Arrhenius, a great chemist and physicist, has, in conjunction with Madsen, and without entering upon any explanation of how the opposing substances come to be produced, put forward the theory that the combination which occurs between bacterial toxin and its antitoxin is precisely similar to the combination occurring between a weak acid, such as boric acid, and a weak base, like ammonia. They claim that the curve of toxin-antitoxin neutralisation, in the case of diphtheria, supports this view.

Yet another explanation is that these combinations between

Digitized by Google

antigens and antibodies are analogous to, or, it may be, identical with, absorption phenomena and the interaction of colloidal solutions as viewed from a physico-chemical standpoint. None of these theories, with the exception perhaps of Ehrlich's, attempts to give any satisfactory explanation of the high degree of specificity exhibited in serum reactions.

This is a very rough and general outline of the chief theories of immunity. The French school so far modified their theory as to admit the production of substances by the leucocytes which correspond very closely to the amboceptor and complement of Ehrlich's bacteriolysin, and which were named by them sensitising substance and alexin.

A very great advance in the theory of this subject was made when Wright showed that leucocytes washed free of surrounding serum had little or no tendency, within certain time limits, to take up foreign germs. Even in the case of leucocytes derived from an individual who had acquired immunity against a particular microbe there was little or no taking up of this microbe in a serum-free medium. It was quite otherwise when the serum of the immune individual was added to the mixture. The leucocytes were then found to contain, after a given time, large numbers of the organism. In other words, there was some substance contained in the blood serum which acted on the micro-organisms, and so prepared them for ingestion by the leucocyte. The question whether this substance is not itself derived from the disintegration of leucocytes I cannot discuss here. The main fact demonstrated was that the leucocyte was comparatively powerless to take up organisms unless these latter were specially prepared. The name given by Wright to this preparative substance is, as you all know, "opsonin," from the Greek verb ὀψωνεω, I prepare victuals for. Now there has been some tendency to belittle this discovery of Wright's, and to maintain that "opsonin" is only a new name for an old substance. That may be so, and, indeed, it is more than probable that we are dealing here—in the case of thermostable and thermolabile opsonins—with nothing else than the amboceptor and complement of Ehrlich, or the sensitiser and alexin of Metchnikoff. Dr. Peel Ritchie, for example, showed you in his interesting lecture last Tuesday some beautiful and important experimental results in which the normal opsonin was first removed from the serum by means of an indifferent organism. This removal

Digitized by Google

is probably identical with the removal of complement from serum by dead or living cells. None the less, the term opsonin is an exceedingly convenient one, and expresses, without reference to purely theoretical considerations, what are actual facts. I think it is probably for this reason that the term has been so widely used and widely accepted. Even if we have to alter our conceptions of the processes of immunity—a very likely contingency—still, the term opsonin will, I think, continue to denote with truth what it does at present. It also meets the case of those organisms, like the staphylococci and others, which were supposed not to be susceptible to bacteriolysis. Most of these, however, are found to be capable of opsonisation, and of being dissolved within, if not without, the leucocyte.

At present opinion is greatly divided as to whether the content of blood plasma in antibodies, or, as we might conveniently say, opsonins, is in any way comparable with what we find in the serum of the blood after it is drawn. One of the issues bound up with this question is as to the relative importance of extra-cellular and intra-cellular bacteriolysis. By some it is contended that extra-cellular bacteriolysis does not occur in the human body except as a result of the death and disintegration of leucocytes, and that our test-tube experiments do not entirely represent what goes on within the body. That is to say, that although we can bring about solution of certain bacteria by simply acting on them with a cell-free immune serum *in vitro*, this does not altogether entitle us to infer that anything similar takes place within the body. It may be, that such solution is only brought about by the disintegration products of leucocytes killed in the process of blood clotting, and that *in vivo*, this solution takes place ordinarily inside a leucocyte or body-cell. In other words, that opsonins do not exist in the body free as such, but represent an internal secretion of the leucocyte or body-cell, which is only set free by the death of the leucocyte. It is difficult, however, on such a hypothesis, to find an explanation of the fact demonstrated by Wright, that no difference can be observed between the leucocytes of a normal individual and of an immune individual in their behaviour to a particular organism, provided they have both been washed free of surrounding serum. But we may leave this point at present as unsettled. What, I think, has been, to some extent, neglected in *all* the theories of immunity to which I have referred is the

Digitized by Google

bacterium itself. The bacterium is a cell just as much as the leucocyte or the connective tissue cell. It is possessed of powers of assimilation and digestion. It may be regarded as possessing very probably the same means of protecting itself which the leucocyte has, and yet it has been too much the habit to regard the bacterium as a much more passive agent than the leucocyte. We are told of how the leucocyte surrounds, englobes and digests the bacterium. We are told of how the opsonin prepares the bacterium for phagocytosis by the leucocyte. But what is the bacterium doing meanwhile? Why should not the bacterium equally well digest the leucocyte? The relative size of the former compared with the latter precludes the possibility of the bacterium englobing the leucocyte. But ingestion of bacteria by the body-cell does not necessarily mean that the latter has got the better of the former. Let us take a concrete example to illustrate the point which I am endeavouring to bring out. If we mix together a thick emulsion of staphylococci, washed leucocytes, and a specifically opsonic serum in certain proportions, and leave them in contact for 10 or 15 minutes at body temperature, the leucocytes are found after that short time to contain within them enormous numbers of staphylococci. Now it seems to me hard to believe that the slow moving leucocyte, by dint of its own amœboid movements, and without any co-operation on the part of the bacterium, could possibly take up the numbers we see it has taken up in the short time allowed it. We see the interior of a leucocyte closely packed with staphylococci, and it is said that these have been taken up and are being digested by the leucocyte. But may it not be a case of the leucocyte being digested by the staphylococci. This is a point on which I leave you to reflect for yourselves.

From this short reference to the general subject of immunity, I pass to consider some practical applications. I have no time to refer to the subject of serum treatment of disease. Leaving this aside, I pass on to consider the subjects of vaccino-prophylaxis and vaccino-therapy which have in recent times received such a stimulus from the work of Wright. The pioneers in these methods were, as you know, Jenner and Pasteur. It is also necessary to mention in this connection the name of Haffkine, who was one of the first, if not the first, to use a bacterial vaccine in the case of man. He used an emulsion of weakened, but living, cholera germs to inoculate human beings, and develop in them an immunity to the

Digitized by Google

disease. Wright followed Haffkine with his prophylactic typhoid vaccine, but introduced the important modification of using dead instead of living typhoid germs, a modification which was probably necessary in the interests of safety of procedure. This modification was adopted by Haffkine later in the case of his plague vaccine. At the same time, this very killing of the bacteria before use very probably alters the kind, or at any rate the degree, of immunity produced; for, in the case of the immunity developed in connection with disease, this is developed in response to the attack of a living cell upon the cells of its host, whereas that developed in response to the stimulus afforded by a killed bacterial emulsion is one developed towards such cell products only as have retained their essential characters in spite of having been raised to a high temperature. There is a tendency to-day to advocate a return to the use of a living unheated vaccine, as, for instance, in the case of plague, in which disease Dr. Strong of Manila uses an avirulent but actually living culture for immunising purposes.

Before the days of vaccino-therapy, as distinguished from vaccino-prophylaxis, one distinction which was roughly drawn between a serum and a vaccine was that the former was curative and the latter preventive. This distinction cannot, in view of Wright's work, be now maintained. We have vaccino-therapy as well as vaccino-prophylaxis. But, as a matter of fact, there never was any real difference of principle involved between immunisation with an antiserum and immunisation with a vaccine—between passive and active immunisation as they were called. Take the case of a serum like diphtheria serum. Here it was possible to separate a highly toxic product from the micro-organism. A horse is immunised or, as we might say, vaccinated with this toxin, and responds actively with the production of an antibody. It is this anti-substance contained in the serum of the horse which is used as a cure for diphtheria, and so it is with tetanus and with snake poison. But this is simply a case of obtaining ready-made, through the intermediary of another animal, substances which, in the case of organisms like the bacteria of cholera, typhoid, plague, and so on, cannot be so obtained. In the case, then, of these latter we have to develop in man himself his own antibodies. We have to use him as we used the diphtheria-serum-producing horse. The antibodies here are produced by

Digitized by Google

man's own efforts in response to inoculation with an appropriate vaccine.

We have already considered very shortly some of the processes which underlie the development of immunity and have considered, to some extent, the way in which protection is brought about. We may now consider these once again from a simpler and less theoretical aspect:—A man is attacked by a disease and recovers. He is then, in the case of a very large number of diseases, immune, for a shorter or longer time, to a second attack. Now, if we could unite this procedure so as to bring about an attack on an individual in a safe and controllable form, that is, in a form unaccompanied with severe symptoms or even with any symptoms at all, we might expect to be able to benefit that individual to the extent of conferring upon him a greater or less immunity to the diseases to which he may become liable. This is what is done by vaccination. In the case of small-pox we give a mild attack of the disease, which is technically called vaccinia, but which is nothing more nor less than a localised small-pox produced by means of a small-pox vaccine. There is produced a very remarkable degree of immunity, in this case, to the more dangerous form of the disease. So in immunisation against rabies we may be regarded as giving the individual who has rendered himself liable to the actual disease a mild controllable and safe attack of rabies which results in the production of such a degree of immunity as prevents the development of the natural form of disease. We may go even greater lengths in pursuing this line of thought and say that it is possible to give an individual a mild, controllable and, what we may call, immunising form of the disease whilst he is actually suffering in some part of his body from a local form of that very same disease. It is in this last conception that you have the principle of vaccino-therapy as distinguished from vaccino-prophylaxis. Produce in an individual a series of attacks of an immunising form of tuberculosis, and the immunity which is developed will result in the removal of the local tuberculosis of glands, of skin, of bone, of the wall of a sinus, or of the genito-urinary organs. Unfortunately, in many of these cases, there is mixed infection, and it is necessary to have regard to this fact in immunising. Where more than one organism is concerned in keeping up a disease process, more than one vaccine will be required for cure—one

Digitized by Google

vaccine, in fact, for each organism. So also in cases of constantly recurring attacks of appendicitis we may set up a safe immunising attack of bacillus coli disease and thus get rid of the local disturbance without, it may be, any operative interference. The treatment may, of course, have to be repeated from time to time, and frequently will be aided by operative measures. It is important, in this connection, to consider for a moment the question of the place where antibodies are produced in response to the inoculation of a vaccine. A very considerable amount of evidence is accumulating to show that these are produced at the place of injection. I will mention one experiment which goes to support this view. A rabbit is taken and an injection of a bacterial emulsion is made into the connective tissue of the ear. After a certain interval it is found that the blood serum, drawn off for test, contains various antibodies to the organism used. Now if the ear be cut off it is found that the quantity of antibodies contained in the serum shows a remarkably sharp fall. It would seem justifiable, therefore, to infer that the anti-substances in question were being produced chiefly in the ear which was cut off, and which was the site of inoculation. We may look at the process thus:—We inoculate an individual in some part of the body with a vaccine. Once the body cells have recovered from the immediate toxic effects, if any, they begin to respond with the production of opsonins, which pass from the inoculated spot in all directions into the lymph stream, and so on into the general circulation. Now consider the case of an individual who has been bitten by a mad dog—let us say in the foot. The incubation period in rabies is, on the average, 20 to 60 days, and the infection progresses by the nerve paths only. During this incubation period we can compel the active development of anti-rabic substances. We commence our inoculations in the subcutaneous tissue of the abdomen. The antibodies produced will antagonise the rabies virus, and if the inoculations have been commenced in time, and if the response of the individual to the inoculation is good, the disease will be prevented from developing. Precisely the same reasoning applies to the case of the individual who has contracted small-pox. If he is vaccinated during the incubation period the disease may be aborted or entirely prevented. An important corollary to this view of local production of antibodies is that where we are dealing with a very localised disease it is import-

Digitized by Google

ant, as Wright has shown, to so place the immunising injections that the diseased area shall intercept the antibodies as they are produced. The antibodies pass into the circulation from the place of injection by way of the lymph stream. Once they reach the general circulation they are of course greatly diluted, and will then only come to act on the disease in this diluted form. It is possible, however, in some cases—as, for instance, a sinus or a gland—to so choose the place of inoculation as to obtain their action on the diseased area before they reach the general circulation. This is done by carefully considering on what lymph stream that area is placed. The inoculation therefore should be so made that the antibodies produced will have to pass through the diseased spot on their way to the general circulation. In this way we get an undiluted and stronger action. But you may ask how it is that this antibody production does not go on locally in the neighbourhood of the disease. Well, it does do so to a greater or less extent, but it would seem, in many cases of long persisting local disease, that something is preventing this from taking place. Wright considers the local disease process as shut off by barriers of its own construction, such as coagulated fibrin and dense granulation tissue, not only from the curative action of the blood fluids, but also from assisting in the development of opsonins by the supply of the toxic stimulus necessary to their production. In vaccino-therapy we supply the toxic stimulus in the shape of our vaccine, and we utilise cells in other parts of the body adjacent to or at some distance from the local condition for the production of the curative opsonins. It may be necessary also to use at the same time means for the breaking down of the barriers which prevent the access of the opsonic fluids to the bacteria. Thus such a method might consist in the application of a blister to a callous ulcer. These auxiliary methods are exemplified in the use of anticoagulating substances, rubefacients, fomentations, massage, light rays, and so on.

Some of you may object to my use of the term disease in relation to what is brought about by vaccination. But this is a mere question of definition. I hold that the only proper classification of diseases is an etiological one, and that a disease is simply defined as the sum-total of effects, great or small, produced by the causal agent. It is necessary here also to state that by "cause of a disease" I refer only to the "invariable antecedent," such as a

Digitized by Google

microbe in an organismal disease, and not to conditioning circumstances which are often included in a text-book list of causes. I should strongly recommend you to read some articles on this subject, by Mr Cathcart, which appeared in the *Edinburgh Medical Journal* of July and August 1896, and which I think you would find very satisfactory in simplifying your studies. I remember well the difficulties I had in trying to remember the classification of diseases of bone or the different diseases of the uterine mucous membrane. Now it is quite easy to remember such a classification of diseases of this latter as streptococcal endometritis, staphylococcal endometritis, gonorrheal endometritis, endometritis due to bacillus coli and so on, than to remember those which are very frequently given. But to return to my subject. You see that if we admit that an etiological basis is the only proper basis for classification of disease, then we are justified in characterising as a mild immunising form of *disease* the effects produced by vaccination. In fact, the presence of typical symptoms is not sufficient or even necessary to denote a disease, and on the present idea we may even have a disease without any symptoms at all.

I hope I have now made clear what are some of the principles underlying vaccino-prophylaxis and vaccino-therapy. I may now refer to some of the directions in which prophylactic or curative vaccines have been used. Most of you are young men, and at a susceptible age. If any of you intend to go abroad I should strongly recommend you to be inoculated for typhoid fever. It is a poor thing to have passed through all your training for your life's work, and then to die shortly after from an attack of this disease, particularly when it is possible to take precautions to very greatly diminish the danger. A recent writer on the subject states that, in his experience, typhoid vaccination has diminished the incidence of the disease by one half and doubled the recovery rate. You can quite well see, however, that even this amount of success implies that we have a number of instances in which persons who have been inoculated have nevertheless developed typhoid and even succumbed to it. These are the cases which are most usually referred to in support of the contention that bacterial vaccination is of very little value—just as the small number of deaths occurring under chloroform are all published in support of the contention regarding the dangerous character of this anæsthetic. But I think that any prejudices against antityphoid vaccination

Digitized by Google

are gradually giving way to a conviction of the utility of the process. In the case of many diseases the immunity conferred by vaccination is all too short and necessitates revaccination. This is perhaps best exemplified in the case of Haffkine's plague prophylactic vaccine. Here the immunity lasts barely 12 months. But there seems no sufficient reason why, where necessary, revaccination should not be resorted to every year. I have always revaccinated myself about every two years for small-pox. Anyone who contracts small-pox has only himself to blame, and what applies to small-pox applies to other diseases too. If I had happened to be in the way of plague contagion I should have been vaccinated for this disease every year as a matter of course. I know of a village in India, the inhabitants of which have come up *en bloc* every year for inoculation against plague and who have never had a single case in their community, although all the villages round about have at one time or another suffered severely. In the plague laboratory in Bombay, where there has been a Commission investigating the subject, one of the staff—a British soldier who had not been inoculated for 18 months previously—contracted plague. His attack, however, as might have been expected, was an exceedingly mild one. He recovered in a few days. Quite otherwise was it with an unvaccinated Indian who had been introduced surreptitiously as a worker into the laboratory. Three days after coming to the laboratory he developed plague and died. And yet with these two exceptions not one of the very large staff, European or Indian, developed plague, although plague-infected rat fleas were so abundant that one had only to put down a guinea-pig and allow it to run about for a time in the room of one of the members of the Commission for that guinea-pig to very quickly develop plague.

These are very striking facts and can only be ascribed to the very careful inoculation to which the entire staff was subjected. Statisticians may say that a mathematical analysis of the data gives no ground for the assumption that bacterial vaccination has any positively assured value; but instances like those I have given above, although few in number, are often sufficient to produce conviction even in spite of doubtful statistics.

I may now refer to vaccino-therapy. It used to be stated that it was obviously impossible to use vaccination as a method of cure in the presence of the actual disease, as we should in that case be

Digitized by Google

only further poisoning the patient—adding poison to poison. But a very great advance in therapeutics was made when it was discovered by Professor Wright that it was possible to cure furunculosis by a process of vaccination with the causal organism. I have already referred to the probable explanation of this strange fact. Wright did further very great service towards crystallising our ideas on this subject and making our inferences more exact by introducing the conception of an index for purposes of measurement of the effects produced by bacterial vaccines. By means of this conception he did away with many of the difficulties of quantitative measurement. He compared always the state of the serum of the hyper-immune or, as the case might be, sub-immune individual with that of a normal individual, and so enabled us to make continued comparisons which would otherwise have been very difficult to make. You are all familiar with the conception of an index in a physical sense, as, for instance, in the case of the refractive index of glass, the specific gravity of urine, and so on. We also have the case of an implicit index in the temperature chart. The ordinary temperature chart gives a base line of comparison usually at a temperature of 98·6° F. But this line is really not quite straight; it should be wavy. We might then talk of the temperature index of a patient. Thus a patient with a temperature of 102° F. would have an index of 102/98·6 = 1·03, and the chart might quite well indicate the temperature in this way. So, then, we have an opsonic index which is the quotient of the effect produced by a test serum, divided by the effect produced by a normal serum. We might in the same way have an agglutinin index, a bacteriolytic index, and so on. The opsonic index of an individual towards a particular organism expresses the state of resistance of that individual at the particular time of observation. It is most valuable not only as an indicator of the effect produced by vaccine injections, but also for diagnosis and prognosis. Of course a serum may alternate between states of hyper-immunity and sub-immunity. If, now, observations are taken at times when the immunity curve is crossing the normal line, the opsonic index will be normal. This, however, does not show that the patient's state is normal. Several observations must be made to determine the real state. Some months ago I visited St. Mary's Hospital in London, and Professor Wright showed me a most interesting case which will illustrate this

Digitized by Google

point. A young woman had been sent to the hospital with a condition which had been diagnosed as gout. This was, however, excluded on admission, and the diagnosis was regarded as lying between tuberculosis and gonorrhea. The opsonic index was taken for each of these organisms, and was found in each case to be normal. This did not contra-indicate the causative action of one or other. What impressed me, however, was the method which was adopted for arriving at a conclusion. Of course a thorough clinical examination had been made, but without result. The further bacteriological examination consisted in this—It was assumed that the immunity curve was crossing or coincident with the normal line for the time being, and it was desirable to bring it below, or, as the case might be, above, the line, so that an unequivocal diagnosis might be made. The joint chiefly affected was the wrist. An elastic bandage was put on just above but sufficiently tight only to compress the veins. In this way blood stasis was produced in and around the part where the disease process was obviously still going on. It was hoped that the stagnant serum would in this way take up some of the toxic substances of the diseased area. Then the bandage would be taken off and the stasis allowed to pass off by absorption of fluid into the blood stream. The serum would then be examined, and in virtue of the toxic products introduced into the circulation it was expected that it would show a definitely lowered index to either B. tuberculosis or the micrococcus gonorrhea, and so the diagnosis would be established. I did not hear the result.

The applications of vaccino-therapy are already numerous. Some have been more successful than others. A tubercle vaccine —Koch's tuberculin—has been used for the cure of lupus, tubercular glands, tubercular sinuses, and genito-urinary tuberculosis. It has been also used in early cases of phthisis. A staphylococcus vaccine has been used for boils, acne vulgaris, sycosis, malignant endocarditis, certain cases of pyæmia, and other such affections due to this organism. A bacillus coli vaccine is useful in some cases of appendicitis, cystitis, and cholecystitis. It is quite possible that an efficient gonorrheal vaccine may be found which will be useful in chronic cases. Captain Forster, I.M.S., is at present busy exploiting the value of a dysentery vaccine in cases of chronic dysentery. Some of his results have been very remarkable, and will be published in due course. I have used a Malta

Digitized by Google

fever vaccine in a case of Malta fever, and believe that it did markedly assist in the recovery of the patient. Let me remark here that Malta fever does not come under the category of local diseases; it is a septicæmia. The explanation of the effect in this case is somewhat difficult. All I can say is that Wright himself and others have also treated Malta fever successfully with vaccines, but the method is to some extent in this case still *sub judice*.

We may hope for a pneumococcus vaccine for some of the more chronic effects produced by that organism, such as a chronic otitis media, and so on. In the case of the larger parasites, such as the malarial parasite, the trypanosome of sleeping sickness, the Leishman-Donovan body, and so on, I think there is more to be hoped for from curative agencies of a more definitely known chemical kind, such as atoxyl, parafuchsin, trypan-blue and others, than from vaccino-therapy. We expect great things at the present time in regard to the cure of disease, and we live in hope. As doctors, the cure of disease is the main point with which we are concerned. How far a large increase in the health and longevity of the general community will increase the struggle for existence is for the political economist to discuss. For you, now, it will be well worth your while to specially familiarise yourselves with the methods of technique by which the necessary estimations are made for vaccino-prophylaxis and vaccino-therapy. The technique is really very simple, and, in spite of the utterances of recent writers, is quite within the scope of clinical examination. I hope, gentlemen, I may have succeeded in interesting you in the great work of a great man.

SOME EXPERIENCES WITH X-RAY AND HIGH-FREQUENCY TREATMENT.

By F. GARDINER, M.D., B.Sc., F.R.C.S.

II.

Rheumatism.—It has long been recognised that electricity is at times useful in diseases associated with the rheumatic diathesis, and the application of more powerful currents is a natural development. Experimental research has indicated that in the

Digitized by Google

high-frequency treatment we have a means of increasing the excretion of uric acid, and, furthermore, that there is at the same time a sedative effect on the nerves. . The following cases were treated locally and generally by this method:—

CASE 1.—S., male, æt. 35, had suffered for some years with subacute affection of the joints for which he had tried all ordinary methods. When first seen he was very lame, the knees, hips and shoulders being most involved. He was then given a 15-minutes' exposure, the spray being directed on the various joints while he held a handle attached to the other end of the resonator. This was promptly followed by improvement, and at the end of the twelfth application, 3 weeks later, he felt quite well and was free from lameness. It is interesting to record that for almost 4 years he has remained free from any serious attack until recently, when a slight recurrence was aborted by 6 similar exposures during a fortnight.

CASE 2.—J. B., male, æt. 29. The symptoms here were not so severe, the joints affected being chiefly the wrists and shoulders, and the pains were of a fleeting character. Nevertheless it had lasted for about 2 years, and although never acute was sufficient to interfere with his work. There was a history also of rheumatic fever some years previously. Couch treatment alone was given on 14 occasions (10 to 15 minutes each) during 6 weeks, and the result was a disappearance of all the symptoms. Three years have elapsed, and he has only had slight recurrences in damp cold weather.

CASE 3.—A. B., male, æt. 30, baker. On one occasion had rheumatic fever, and for the last 3 years had suffered from acute exacerbations, affecting chiefly the lower limbs. Sixteen exposures were given during a period of 3 weeks, these consisting of both couch and effleuve applications. Marked improvement followed, but unfortunately treatment could not be continued.

CASES 4, 5, 6 were females, aged about 60; all suffered from a chronic condition of the joints of the fingers and wrists. In each case 16 to 20 treatments by the vacuum electrode locally in addition to the couch were followed by decided benefit.

Digitized by Google

Case 7.—Mrs. D., æt. 32, suffered from an acute febrile attack affecting the right wrist for 3 weeks. After the temperature had become normal, 30 exposures, as in the last cases, were given locally and generally within a period of 6 weeks. Complete cure resulted, and there has been no recurrence after 2 years' interval.

Case 8.—Miss M., æt. 34. Suffering from a recent acute attack in the left knee, which still remained painful and troublesome. Six exposures by means of the couch and the vacuum electrode locally were followed by disappearance of all symptoms.

These may be taken as types of cases. In all I have treated 38, and in most cases the amelioration has been great; none have failed to benefit somewhat, and I am convinced that with longer periods of treatment still more permanent results could be obtained. Patients with rheumatism generally accept their discomforts in a fatalistic spirit and never expect to be quite free, consequently they cease treatment when made comfortable for the time being. Naturally better results are obtained with young people and when treated after an acute attack, but with all cases it should be an endeavour to secure a prolongation of treatment for some time after symptoms have disappeared. Where there is an old standing condition of rheumatoid arthritis or much bone deformity little benefit is to be expected; but even there some temporary palliation of suffering may be attained.

Lumbago.—

Case 1.—H. M., æt. 40, policeman. The pain in the lumbar region had lasted for 2 years, and previously he had undergone a course of massage for it. The urine was examined and no abnormality found. Thirty exposures of 10 minutes were given during 3 months, generally 8 to 10 being given on successive days. The vacuum electrode was mostly used directly over the area, and even severe erythema was induced. Latterly he had, in addition, treatment on the couch, but no improvement was produced.

Case 2.—J. H., male, æt. 60. A very similar case, lasting a year. Sixteen exposures in 3 weeks were given by couch and vacuum electrode, but at the finish there was no apparent benefit.

Digitized by Google

CASE 3.—D. F., male, æt. 45. Condition lasting 3 years. Thirteen exposures, locally and generally, in 3 weeks produced great benefit; 2 months later other 6 exposures were given and the symptoms disappeared entirely.

CASE 4.—J. S., male, æt. 50. Condition only lasting a few months. Fourteen exposures as in last case given in 3 weeks produced a great improvement.

These results are not brilliant, but the number is limited, and the method has done good in some cases; probably in more recent attacks better results might be attained. May it not be that in the first and second case there was bone involvement?

Sciatica.—

CASE 1.—A. M., male, æt. 38. Severe pain had lasted off and on for several months; he could not stoop, and even took his meals standing. Thirteen exposures to the couch and spray were given in a month. The first produced immediate benefit, but subsequently a relapse occurred and it was thought fit to apply emplast. cantharidis in addition for one night. Eventually the condition yielded.

CASE 2.—Mrs. M., æt. 58. This was a very recent case in a woman generally weak. Six exposures to the couch in a fortnight produced distinct improvement. Unfortunately circumstances prevented continuance of treatment.

CASE 3.—Miss I., æt. 30. Had periodic attacks during 3 years. Treatment was carried out for 2 fortnights within 6 months; each time a dozen exposures were given as in Case 1. I have heard of no recurrence.

CASE 4.—J. S., male, æt. 45. This patient had suffered pretty constantly for 3 months. Here again a fly blister was used in addition to a dozen exposures by means of the effleuve. The treatment was continued during 3 weeks and he then felt quite well. Two and a half years later a recurrence not so severe necessitated another 8 exposures.

CASE 5.—Mrs. H., æt. 34. In poor condition generally and suffering from pain lasting 3 weeks. A dozen exposures produced great benefit.

Digitized by Google

These illustrative cases all derived considerable benefit, and again it would have been desirable to give a more prolonged course. The most striking results are obtained when the acute stage is over, as in very recent cases the pain may be intensified at first, although ultimately it yields. Of course many people are unable to move in the early stage, so that most sufferers come when the disease is a lingering one.

Megrim and Neuralgia.—

Case 1.—W. C., male, æt. 30. Suffered from weekly headaches, chiefly unilateral. No evidence of eye-strain or other cause could be got. Antibilious treatment was followed by some improvement. On 2 occasions he was given a series of 8 exposures locally by means of the spray or vacuum electrode in addition to couch treatment. The pain on each occasion was aggravated for half an hour, and then got easier, but no permanent improvement followed.

Case 2.—J. T., male, æt. 35. A comparatively similar case. Was given 13 exposures to the effleuve within a period of 16 days. No improvement.

Case 3.—A. F., female, æt. 55. Headaches associated with choroido-retinitis and biliousness. The vacuum electrode was applied on a dozen occasions over the eyebrows. This treatment carried on during a month produced marked benefit, but the condition has recurred.

Case 4.—J. S., male, æt. 60. Trigeminal neuralgia of a severe type lasting for some years, and which had been treated by all the usual drugs without effect. He was given 16 exposures to the effleuve within 3 weeks, but no change in the condition followed.

Case 5.—Miss K., æt. 60. Suffering from neuralgia as a sequel to herpes zoster; was given 13 exposures of 10 to 15 minutes by the couch and spray. No benefit resulted.

Case 6.—Mr. W., æt. 65. Neuralgia in amputation stump. Previously had enlarged nodes at the ends of the nerves removed. This patient has had several series of treatments—each a dozen

Digitized by Google

—by means of the couch and vacuum electrode, and benefited on each occasion.

These results do not correspond to the more promising experiences recorded by some writers. The failure in some cases at least may be explained by the presence of deeper irritation which was unaffected by treatment, and yet some alleviation even there might have been expected, to judge from results in the next disease mentioned.

X-rays have been tried fitfully in some milder cases with some benefit.

Locomotor Ataxia.—

CASE 1.—J. M'H., æt. 60. Typical case, with lightning pains in the lower limbs. Previous history of syphilis was obtained. Twenty-three exposures of 10 minutes on the couch were given in 4 weeks, and produced almost complete disappearance of the pains. They have recurred since.

CASE 2.—A. F., æt. 55. Another similar case, with classical symptoms and pains in the limbs. A dozen exposures as above produced some benefit. I found out that he had been drinking, however, during this period.

CASE 3.—J. S., æt. 40. Disease affected the arms chiefly, and was complicated with gastric crises. These crises were, however, delayed by several weeks after a series of 26 exposures. Recurrence followed here.

In these 3 cases, all diagnosed by neurologists, distinct benefit was obtained. Undoubtedly this benefit was temporary, but in an incurable disease the method might well take place as one of the pallative remedies. Many patients would gladly welcome temporary relief, even though cure could not be expected.

Paralysis Agitans.—Only one case came under observation—Miss M., æt. 60. Disease had lasted for about 2 years, and affected both arms and legs. Treatment was entirely by the couch, 10 to 15 minutes. Twelve séances were given—at first 4 on successive days, and then once weekly. Some immediate improvement was obtained, but this did not last.

Digitized by Google

Neurasthenia.—

CASE 1.—Miss N., æt. 32. Disease had commenced a month previously, and the typical rapid pulse and general weakness were present. The diagnosis was confirmed by another physician. Twenty-six exposures of 10 to 20 minutes each were given during a period of 8 weeks, but no evident benefit was noticed.

CASE 2.—Mr. M., æt. 30. This case had been going on for some months, and the symptoms were in part referred to the stomach. Six exposures of 10 minutes, by means of the couch and vacuum electrode over the stomach, were given in 8 days, but, although the time was short, no change occurred.

CASE 3.—L. L., æt. 38. Disease lasting for 6 months. Thirteen exposures on the couch were given in 3 weeks without benefit.

CASE 4.—Miss J., æt. 38. Disease lasting 3 months. Here, also, there were stomach symptoms. She was given 12 exposures, as in Case 2, and distinct improvement both in the stomach and nervous condition resulted.

Thus only 1 out of 4 cases derived any benefit. The others were unaffected either as regards their pulse rate or sleeplessness.

General Debility.—This very common condition of "fag," with no definite organic mischief, is one which yields most satisfactorily to high-frequency treatment. Details need not be given, but over a dozen cases have benefited, without one failure. They all slept better, and felt more vigour next day. The method is indicated where a holiday is unobtainable, and, like this holiday, may stave off more serious illness. It may be stated here that if no improvement is experienced in *any* morbid condition the remedy has this in its favour, that it can be tried without doing any harm—a statement which cannot be made of all medical treatment.

Insomnia.—

CASE 1.—J. T., æt. 60. Suffered for some months; only slept about an hour at night. Twelve exposures on the couch given during a fortnight produced a decided improvement, and although not quite well, he got 4 or 5 hours' repose at night.

Digitized by Google

CASE 2.—A. W., æt. 65. Previously had pneumonia, and this condition was left as a sequel. Here 12 exposures produced a complete and lasting cure.

CASE 3.—M. S., æt. 58. This man suffered from valvular heart disease, and was induced to try 6 exposures. These were given within a period of 10 days, but no definite result was obtained.

CASE 4.—J. C., æt. 34. A man given to alcoholic excess, and also suffering from valvular disease of the heart. Eleven exposures in 3 weeks did no good.

CASE 5.—Mrs. R., æt. 64. Had suffered off and on for years with this condition, and latterly was a victim to sulphonal. Sixteen exposures were given in 6 weeks, and during this period and for a long time after no drugs were required, as she obtained natural sleep.

These 5 cases suggest that where there is no organic mischief this method may well be considered. There are no evil effects resulting, and no drug habit is induced. In course of treatment with other conditions many patients voluntarily remarked that their sleeping capacity was much improved.

Nocturnal Incontinence of Urine.—

CASE 1.—C. H., female, æt. 10. This was an excitable child who had suffered from the condition since the early years of life. Thirty-two exposures from February to June 1904 were given (every second or third day on an average)—the method adopted being to direct the effleuve to the front and back of the pelvic region. Immediate improvement followed, and at first each exposure was followed by a dry night. Gradually these got longer, and now, three and a half years later, she is quite well.

CASE 2.—N. Y., male, æt. 5. Suffered from infancy. Circumcision produced no benefit. Thirteen exposures as above was followed by cessation of the trouble.

CASE 3.—J. C., æt. 18, sailor. On two occasions was treated by 8 or 9 exposures, both with the couch and effleuve locally. The

Digitized by Google

first occasion was followed by improvement lasting for some weeks. On the second occasion he was quite well at the end of treatment, but has not been seen since.

The disease is a troublesome one, and patients feel keenly the ignominy of it when they are old enough to understand. Furthermore, it is a complaint which drugs often fail to alleviate, and the promise of these results, all in cases previously treated by drugs, is well worth notice.

Dysmenorrhœa.—I was first directed to this by treating a case of anal fissure where there was dysmenorrhœa, and accidentally noticed the improvement.

Case 1.—Mrs. K., æt. 34. Small fissure of the rectum, with pain on defæcation. This was treated by the rectal electrode attached to the resonator. Six applications of 10 minutes were given thrice weekly, then stopped owing to menstruation, which was painless, the first time for years. Previously she frequently fainted at this time, and pain in any case necessitated lying down. Another 6 applications per vaginam were given later, and again pain was alleviated. Eventually the pain recurred. The fissure gave no further trouble.

Case 2.—Mrs. H. Severe pain, accompanied with sickness, just before and at menstruation. Twelve applications per vaginam produced benefit, but here again recurrence followed.

Thus, in these 2 cases, only temporary benefit resulted, and both afterwards were curetted with good results, although not complete cure.

Dyspepsia.—

Case 1.—Mrs. S., æt. 40. Previously went through an operation for double ovariotomy. Was a neurotic patient, and complained of pain an hour after eating, the pain being accompanied by marked flatulence. The case was a chronic one, had gone on, more or less, for a year, and been treated with the usual drugs. She was given 8 exposures of 10 minutes each in a fortnight, a moist electrode attached to one end of the resonator being applied over the stomach while the patient held a handle attached to the other end of the

Digitized by Google

resonator. The eventual result was satisfactory, the symptoms disappeared, and only now, 2 years later, has she had any serious symptoms.

CASE 2.—J. D., male, æt. 36. Suffered from neuralgic pain in the epigastric region, more especially after 3 or 4 hours of fasting. On 3 occasions during the last 3 years he has had a series of 6 exposures. These attacks have come on after a chill or overwork, and on each occasion drugs were tried first, but failed, and electrical treatment as above, varied with the vacuum electrode, was followed by a cure.

CASE 3.—T. M., male, æt. 35. Alcoholic, with some enlargement of the liver. His symptoms were vomiting, pain half an hour after eating, and nervousness. The moist or the vacuum electrode was used in 2 attacks with prompt success. On each occasion he had 6 séances.

CASE 4.—J. F., æt. 28. Anæmic girl. Suffered from giddiness and pain very soon after eating. Seventeen exposures were administered, as in the preceding case, in 3 months, at first every third day, then once weekly. The symptoms abated greatly, but have not wholly disappeared.

CASE 5.—Mrs. C., æt. 32. Constipation; pain immediately after eating; vomiting frequent. Fourteen exposures were given in a month, then after a cessation of 6 weeks other 17 exposures in a period of 5 weeks. The vacuum electrode was chiefly used, and seemed to alleviate slightly. Eventually she was operated on, and several strictures of the colon were found. The patient died.

CASE 6.—N. S., female, æt. 30. Anæmic, and suffered from pain very shortly after eating. She was given 4 weekly exposures to the vacuum electrode with marked benefit. Improvement has been sustained.

These and similar cases have, with the one exception, yielded good results. All those treated had previously been using drugs and dieting without experiencing much improvement.

Digitized by Google

The idea suggests itself to one's mind that the method may be most useful in the nervous dyspepsias, but there are few dyspepsias from which this element can be altogether eliminated.

Hæmorrhoids.—

CASE 1.—J. T., male. Had suffered for years from this condition. The piles were internal chiefly, and frequently bled. During 5 weeks on 2 occasions, at an interval of 2 months, he was given in all 39 exposures by means of a large metal electrode passed up the rectum, the exposures lasting from 10 minutes to half an hour. The result in the end was nil.

CASE 2.—T. M., male, æt. 30. A mild case, and also internal; derived much benefit from 3 exposures as above. I have lost trace of him since.

CASE 3.—J. O., male, æt. 45. Chiefly external; a large protruding mass all round the anus. These originally were of the bleeding type, and had existed 10 years. The metal electrode seemed to aggravate the pain. Accordingly he was given treatment by means of a moist flat electrode over the anus. He was given 6 exposures in a fortnight, each lasting 15 minutes, and was soon able to walk more easily. When last seen they were steadily shrivelling.

Among the pathological conditions cured by high frequency many have noted hæmorrhoids, so I give these results as they stand, the first especially giving food for reflection.

Pruritus Ani.—J. L., male, æt. 28. Suffered from this condition for two years; was given 4 exposures during a fortnight with some benefit. Eventually he got quite well after painting with silver nitrate solution and dusting with calomel for some weeks.

Carcinoma of the Bladder.—One patient, an elderly lady, was treated for this. The case was diagnosed by a gynæcologist, and considered inoperable. A vaginal electrode was used, the head being pressed against the tumour in the anterior fornix. Thirteen exposures were given within 4 weeks, during which time the tumour got less, and the troubles of micturition abated. She has

Digitized by Google

had no inconvenience since after the lapse of 3 years. The mental query is, Was this a mistaken diagnosis? In any case, the relief from symptoms was undoubted.

Carcinoma of the Cervix.—This was an advanced case which had been previously treated by cautery. Twelve exposures by the vaginal electrode produced no change in the tumour or affected the hæmorrhage.

The remainder of this paper is mainly a record of X-ray work, unless where specially noted.

Sarcoma.—

CASE 1.—Tumour involving the right side of the neck and extending up to the ear. Eleven exposures, with a borrowed 10-inch coil and accumulators, were given on successive days, each lasting 5 to 10 minutes, and produced eventually some reaction, but no improvement occurred, and the patient died a month or so later.

CASE 2.—Tumour involving the left tonsil. This case was seen by a laryngologist, who proposed tracheotomy. X-rays were applied through the open mouth, and externally at the angle of the jaw. After 4 exposures the swelling had reduced to a third of its size. He was given in all 12 exposures of 10 minutes each in 3 weeks, but unfortunately he afterwards was lost sight of.

Epithelioma.—

CASE 1.—Mr. S. Lesion affecting the right side of the jaw; operated on 3 times and always recurred: X-rays were given on 16 occasions during a period of 6 weeks, each exposure being of 5 to 12 minutes' duration, and the spark gap at 4 or 5 inches. At first there was some alleviation of pain, but ultimately the result was nil. Death ensued some months later.

CASE 2.—Mr. O. This again was a tumour of the jaw previously operated on and which had recurred in the neck. Two exposures of 5 and 8 minutes were given on alternate days, but the sequel was disastrous, the patient dying a day or so later with hæmorrhage through involvement of the carotid.

Digitized by Google

Cancer of the Breast.—

CASE 1.—Miss F., æt. 40. This patient, who, it is interesting to relate, was the grand-niece of the heroine of "Rab and his Friends," had suffered for some months from a hard, slowly growing scirrhus which, when first seen, was 2½ inches in diameter. She informed me that every generation since the above story had been so afflicted. Operation was refused, and in all 41 exposures of 5 to 10 minutes were given in 3 weeks. The tumour was reduced to a half its original size, but eventually the patient died with multiple nodules on the skin and metastases in the spine.

CASE 2.—Mrs. P. Large rapidly growing scirrhus of the right breast. Operation had been performed but recurrence followed. Ten exposures of 10 to 20 minutes with a tube equal to a 6-inch spark appeared to relieve at first, but the treatment, which lasted a month, did no ultimate good, and the patient died.

CASE 3.—Miss B. This patient previously was operated on, and signs of recurrence on the neck appearing X-rays were suggested. Thirteen exposures of 5 to 10 minutes were given within 4 weeks. In addition, on 3 occasions high-frequency treatment was given by the vacuum electrode. Three years later I was informed that she was quite well.

CASE 4.—Miss M. Tumour involving one breast. Was given 6 exposures of 10 minutes each within 10 days which produced a diminution in size. Shortly afterwards she was operated on when the parts were found to be very soft. More than 3½ years have elapsed and the patient is in good health.

CASE 5.—Mrs. G. Condition on the right breast was that of cancer *en cuirasse* and had lasted for 8 years. When seen there was an ulcer 2¼ by 1 extending from the nipple outwards, and in addition there were several isolated nodules below. Twelve exposures first of 10 minutes and latterly of 20 minutes were given within 4 months, and within 6 weeks the ulcer had healed. On one occasion there was a slight reaction which necessitated cessation for a month. Two months after the last exposure a group of small isolated nodules were observed at the lower margin of the ribs. Unfortunately the patient died of intercurrent disease.

Digitized by Google

These cases are all instructive and point to the fact that in X-rays we have a means of aiding the effects of operation.

I do not propose to labour a subject which has been amply discussed before, but would suggest that all scirrhus cases should be X-rayed before operation to limit the disease, and also after operation to make certain of eradication.

The good result in the last case is explainable because in it there was a more superficial condition to deal with.

Paget's Disease of the Nipple.—One case in an old lady came under observation; there was no glandular involvement. Six exposures of 5 to 20 minutes were given with a hard tube, and the condition was soon after apparently cured. She died of other disease a year later.

Rodent Ulcer.—

CASE 1.—J. L. Ulcer ¾ of an inch long and ½ inch broad involving the inner canthus of the right eye. Thirty-nine exposures of 5 minutes each were given during 2 months, a spark gap of 4½ inches and a distance of 4 inches being maintained throughout. Previously excision and cauterisation had been tried, with recurrence later. The condition remained cured, after the X-ray treatment, during the remaining 5 years of the patient's life.

CASE 2.—J. P., æt. 80. Excision was carried out 15 years previously. When seen there were crusted ulcers, each about the size of a sixpence, behind the left ear, and at the outer canthus of the left eye, as well as several smaller patches on the cheek of the same side. Nine exposures of 20 minutes each were given in November and December to separate parts, 2 in January, and 1 in March, with complete cure as a result. He died 4 years later, and about that time some signs of return of the disease were noticed.

CASE 3.—Mrs. A., æt. 60. Ulcer on nose involving chiefly the left side and the ala nasi. Two years previously scraping had been carried out. There was slight thickening all over the part, with a punched out ulcer ½ inch in diameter at one spot. Four exposures of 20 minutes were given in 5 months, at the end of which time there was no apparent disease.

Digitized by Google

CASE 4.—Mrs. A. C., æt. 65. Fungating ulcer 2 inches in diameter over the upper part of the left scapula, with small glandular enlargement in the neck close by. During 3 months she was given 20 exposures of 10 minutes, at first bi-weekly, then less frequently, and then 8 exposures of 20 minutes at intervals of 3 weeks. At the end of this time there was no sign of disease, but 2 months later there was the slightest thickening, and 2 doses of 20 minutes were given. No recurrence has appeared after 2 years. The glandular enlargement suggested the diagnosis of epithelioma; it disappeared also under the treatment.

CASE 5.—Mr. B., æt. 60. Duration 7 years; scraped 3 years previously. The ulcer involved the inner canthus of the left eye and parts below. There was a large amount of fibrous tissue, and hence the slow progress. Thirty-two exposures had to be given during the first 3 months; 10 to 12 minutes every third or fourth day. Later, 20 minutes every 3 weeks for two months, and then at intervals of 2 months the same dose was given. When last seen he was quite well after a year's treatment.

CASE 6.—Mrs. X., æt. 70. Small, very deep rodent extending into the bone close to the right ala nasi when seen in 1903; before this X-ray treatment had been given elsewhere. After the first few months it appeared to improve, when X-rays were given thrice weekly in doses of 5 to 10 minutes. A reaction set in; when this subsided high frequency treatment was substituted for some months. Again X-rays were resumed once or twice weekly and have been continued since. Operation was proposed but not consented to. The disease has steadily spread, involving the antrum and palate, leaving a cavity as large as a walnut.

CASE 7.—Miss G., æt. 35. Large ulcer, 6 by 4, involving the gluteal region of left side. Nineteen exposures of 10 to 15 minutes were given in 2½ months. The edge grew in slightly but the ulcer was very deep down to the bone. This patient ceased attending.

CASE 8.—Mr. F., æt. 74. Duration, 4 years. Ulcer ½-inch in diameter, crusted; situated on the left cheek. This was first treated with chromic acid. Eleven exposures of 5 to 20 minutes

Digitized by Google

were given within 6 months. When last seen he was practically well.

CASE 9.—Mrs. L., æt. 70. Small vascular swelling on the right ala nasi. Duration, 5 years; formerly scraped. Three exposures of 10 to 20 minutes within 2 months were given, and when last seen, a month ago, the condition was apparently cured.

CASE 10.—Mrs. H., æt. about 65. Duration, 3 years. Circular patch ⅜-inch. in diameter; slightly crusted on the tip of the nose; slight scar at the right side. Five exposures of 5 to 15 minutes were given within four months, and when last seen, a fortnight ago, the slight thickening was fast disappearing.

CASE 11.—W. A., æt. 57. Duration, 3 years. Tumour with pearly edges, and depressed centre at inner canthus of left eye. This was scraped 2 years ago, and recurred. Four exposures of 10 to 15 minutes were given within a month, and when last seen, 3 weeks ago, there was only a slightly raised edge.

These results bear out the records of other observers. When the bone is involved the results are generally far from satisfactory, as evidenced by the two failures mentioned.

A simple skin condition, as the majority of these were, yields almost certainly to treatment. The point to be enforced is that they should be treated early. Cauterising and scraping are good remedies, and may be used as a preliminary—some say curative—agent, but it is to my mind safer in all cases to follow up this with 1 or 2 exposures to X-rays.

Warts.—

CASE 1.—Mr. K., æt. 26. A group of 10 verruca plana were present on the left side of the chin and had existed for 18 months in spite of escharotics. One exposure of 20 minutes to X-rays was followed by their disappearance in a month.

CASE 2.—Mr. M., æt. 30. About 30 large papillomatous warts were present on the backs of both hands, and had been present for 3 years, during which time escharotics were employed unsuccessfully. This patient was first treated for 3 weeks with morning

Digitized by Google

doses of salts without result. Next 6 applications to high frequency once weekly for 10 minutes with vacuum electrode or spray, again without result. They then were exposed to the X-rays, each group getting first 20 minutes, and at the end of 3 weeks another 20 minutes; 6 weeks later they had disappeared.

The results are as good as have been elsewhere noted, and the remedy is painless, and may well be used in stubborn cases.

Acne Vulgaris.—Three cases have been tried. The first was a long-standing case, and was given 12 exposures of 5 to 14 minutes within 5 weeks, and pushed to the extent of erythema. Undoubtedly the condition was one of long standing, but no benefit was obtained.

Other 2 cases, more pustular in character, seemed to derive some benefit, but only had 3 applications of 10 minutes each. Recently more success has been obtained by using the high frequency spray in one case, and pushing it to the sparking stage.

Sycosis.—

Case 1.—Mr. P., æt. 25. The condition was confined to the centre of the chin, and had existed for 2 years. Nine exposures of 8 minutes were given on successive days. Later a reaction set in, but the disease gave no further trouble.

Case 2.—G. S., æt. 35. The condition, confined to the lower jaw, and also central, had lasted for a year. Eleven exposures of 5 to 15 minutes were given twice weekly; a slight erythema developed, and the lesions disappeared; no return after 4 years.

There are two actions of the rays here, one antiphlogistic and the other that of epilation. Both are helpful in this condition, and the speedy cures were due undoubtedly to the limitation of the affected region. With wider extent of disease the results are not so speedy.

Lichen Planus.—Two cases were treated with X-rays. Both, however, were treated simultaneously with mercury internally. The first in a woman of 34 was confined to the inner aspect of both ankles and the parts of the leg adjoining. In all 5 exposures

Digitized by Google

of 15 to 20 minutes were given to each part during a period of 3 months. Cure resulted.

The other, also on a female, æt. 40, was more widespread, and the inner aspects of the knees were alone X-rayed. Two exposures of 20 minutes in 3 weeks was followed by a slight reaction with a most beneficial sequel. Both cases are now well.

Psoriasis.—Several observers have reported brilliant successes with high frequency treatment. I tried it in 2 widespread cases by means of the couch and the spray and vacuum electrode locally. One case got 13 exposures in a month; another daily exposures for 9 days. No improvement was noticed although this was pushed to a painful limit. In one case thinning was noticed later. The disease is one which at times disappears spontaneously, and this may account for the success of others, while, again, I may have been unfortunate in my choice of cases.

When dealing with more stubborn isolated patches of chronic type X-rays are of undoubted value, and several cases so treated have benefited.

Chilblains.—Both X-rays and high frequency treatment have yielded promising results in this condition. Three cases have been tried with each method and all improved.

Alopecia Areata.—In a condition as this is, where there is atrophy of the scalp, any stimulant might be thought to be of use; accordingly, in one extensive case, the high frequency vacuum electrode and spray was used. The case had lasted for months, and on two occasions within 3 months a dozen exposures were given, but not the slightest benefit was apparent, although erythema was induced.

The list of diseases which have been treated is purposely a large one. For reasons of space I have curtailed the latter part, but as the early pages have shown the methods adopted, it has been probably sufficient to note the results; for similar reasons no references have been included. The record is the writer's quota of work done; others have written and will add more. It has entailed many hours of labour, and if the end in many cases has been failure, yet even these failures may, after all, be only the setting up of useful limits. For this class of work the scientific grant has been of great value. The successes are left for others to judge or confirm.

Digitized by Google

THE RECOGNITION AND TREATMENT OF INCIPIENT MENTAL DISEASE.[1]

By T. C. MACKENZIE, M.B., F.R.C.P.,
Senior Assistant Physician, Royal Asylum, Aberdeen.

THE subject to which the foregoing title refers is one that of late years has assumed an increasing importance, firstly in the minds of members of the medical profession, and secondly in the mind of the public. The "hospital treatment of the insane" has been a familiar expression for many years. Some authorities, in their desire to emphasise the medical aspects of the work, and destroy antiquated and erroneous ideas regarding asylums, are anxious to abolish for ever the use of the word "asylum." They would have such places called Mental Hospitals. The recently completed Edinburgh City District Asylum has even been given a title that gives no indication whatever that the institution is a medical one: it is called "Bangour Village." I think that this is going to an unnecessary extreme. Asylums always will remain asylums—refuges—for the mentally unfit, however they may be named. Hospitals and hospital treatment are not essential for the majority of the mentally enfeebled and physically defective patients, who form so large a proportion of the chronic inmates of every asylum, but they are essential features in every asylum, and indispensable for the proper treatment of many of the cases admitted into asylums. The treatment that such cases receive in these asylum hospitals tends also to diminish the number of permanent wrecks, and even more to diminish the difficulties of their permanent maintenance in the asylum.

But if the "hospital treatment" of the certified insane is so desirable and beneficial a thing, surely all that the term implies is infinitely more desirable, and ought to prove even more beneficial in the case of the uncertified insane, in the case of those suffering from mental disorders in their early or incipient stages. Such persons are not, and under British Lunacy Law cannot be, provided for in asylums, and they ought not so to be provided for. At the same time, however, such patients are, as a rule, unprovided with hospital treatment of any kind. One of the purposes of this paper is to put the question—Is not the provision

[1] Read to the Aberdeen Medico-Chirurgical Society on February 6, 1908.

Digitized by Google

of hospital treatment for such cases desirable? and, if possible, to supply arguments that will warrant an answer in the affirmative.

The incipient stage of mental disease is that in which all authorities are agreed in describing it as most curable. No man is more ready to believe that than the asylum doctor. The cases that he receives as certified patients, when their histories are inquired into, often reveal a remote onset and a slow progressive development of the symptoms. Further inquiry, however, gives no indication that the presence or tendency of these symptoms had been recognised, or that any attempt had been made to treat them. It is easy, however, to be wise after the event. It is easy to say that if the case had been recognised months ago as one of incipient mental disease the patient could have been properly treated, and his or her recovery almost assured. How is the general practitioner to recognise the signs of incipient mental disease? In reply to this question no very satisfactory answer can be given. Little is known and less taught regarding the signs of incipient mental disease. The medical student during his curriculum has no opportunity of seeing such cases. The cases that he sees during his 3 months' course of Mental Diseases are those of fully-developed insanity, many of them of an incurable nature. Reference to medical literature reveals very little that is definite or informing on the subject. The incipient stage of mental disease may be the most curable, but, at the present time, it is the stage that receives the least attention. The existing state of affairs, as one writer has put it, may be likened to that which would obtain in eye diseases, if no special treatment could be obtained until the patient was qualified by total blindness for admission to the Ophthalmic Hospital.

In an article entitled "The Prodromata of the Psychoses and their Meaning," published in the *Review of Neurology and Psychiatry* for 1903, Dr. Clouston writes as follows:—"It is a fact in psychiatry which has by no means been sufficiently recognised, that attacks of mental disease have early symptoms that are often not mental in character; and it is equally true that in neurology the fact has not attracted sufficient attention that all sorts of sensory, vaso-motor and motor symptoms may be the mere preludes to an attack of insanity, and not of themselves the real disease. Such prodromata of so serious an event as an attack of insanity are exceedingly well worthy of careful study for many

Digitized by Google

reasons, most notably because the recognition of their true character and their explanation might enable us in many cases to anticipate and possibly to ward off the mental attack."

I desire to offer the following remarks as the result of an examination of the history obtained in the cases of 12 patients recently admitted into the Aberdeen Royal Asylum. In 9 of the cases there was a family history of insanity: in one of the remaining 3 cases there was a marked family history of cancer and phthisis. In 2 of the 12 cases there was a history of a previous mental attack. In 3 of the cases the attack of insanity was preceded by an attack of influenza occurring respectively 6 weeks, 5 months and 17 months before admission. In 6 of the cases headache had been a prominent symptom. In 11, loss of sleep, varying from total sleeplessness for considerable periods to occasional restlessness at night, had been present. Loss of appetite, amounting to refusal of food on one or two occasions, had been present in 9 cases. Nine of the patients had complained of a general feeling of being not well. The duration of the period during which some or all of these symptoms had been present in the different cases varied from a few days in 3 cases, to 1 year in 1 case.

Though aware that the above results can represent only a partial and very inadequate summary of the prodromata of an attack of mental disease, they contain certain points that I think will repay consideration. Passing over the question of heredity for the present, it is of interest to note the occurrence of an attack of influenza in 3 of the cases. Dr. Savage, in his recent Lumleian Lectures upon the Increase of Insanity, laid stress upon influenza as a factor in the causation of mental disease. He says that it is a constant cause of most obstinate insomnia: it causes painful neuralgias, and often disturbs digestion and nutrition. It may start any form of insanity, but there is no specific form of insanity that can be called influenzal. In patients with strong neurotic heredity the first attack of insanity is often preceded by influenza. In patients who have had previous attacks of insanity, influenza may start a fresh attack. Suicides increase markedly after an epidemic of influenza. This fact of the occurrence of various forms of mental disease after influenza is an additional reason, if one were needed, for emphasising the importance of the after-treatment of an influenzal attack, and of ensuring that convalescence is followed by real recovery.

Digitized by Google

Of the 6 cases in which headache occurred, 5 were women and 1 was a man. I have had no experience as to whether the headaches in such cases possess any special features, but in the article already referred to Dr. Clouston writes as follows in regard to them:—"In most cases the headaches have not quite the character of the ordinary 'woman's headache:' they are more constant, more intense, more distracting and disabling; the patients will not always admit they are 'headaches,' but describe them as 'peculiar' sensations. Sometimes there are feelings of weight, sometimes of lightness, sometimes a bursting or congested feeling. They are seldom localised, they seldom have the shooting neuralgic character, they are not always relieved by rest and the recumbent position, but rather by fresh air and mild exertion. They have not the character of megrim, and seldom are attended by sickness or vomiting." They are most frequently and characteristically seen as prodromata of the melancholia which follows influenza. Associated with, or taking the place of such headaches, there may be various paræsthetic disturbances, such as giddiness, sensations of weight or lightness, emptiness or fulness, heat or cold, etc. The continued occurrence of such sensory disturbances, particularly in female patients, should suffice to put the family doctor on the look-out for other signs of a possible mental attack, and certainly to do his best to prevent their continuance.

A varying degree of sleeplessness is certainly a very constant forerunner of an attack of mental disease. It was present in 11 out of the 12 cases. Insomnia is so frequent and prominent a symptom of many forms of fully-developed mental disease, that it may perhaps be argued that its early occurrence should not be regarded as a prodroma of a possible or subsequently occurring mental attack, but rather as an actual symptom of an already existing attack. In certain cases this may be so, but in other cases it almost certainly is not, and in any case it seems wiser to give the patient the benefit of the doubt, and to treat the case in the belief that the restoration of sleep may prevent the onset of insanity. I think the following case may be of interest. A. B., aged 48, a fisherman, was recently admitted to the Aberdeen Royal Asylum. His father is at present, and has been for a long time, in the asylum. The medical certificates stated that A. B. had been restless and excitable for some weeks, complaining of different imaginary ailments; refused to answer questions put to him; was

Digitized by Google

very violent; required to be held by force; thought he was mortifying; asked that his children should be removed from him, as he feared he might attack them. The history was as follows:— For the last 10 weeks he had been sleeping badly and had also suffered from a "bealing finger," which, about 6 weeks before admission, was amputated; the pain of his finger caused loss of sleep, he began to think about nothing but his finger, then thought that his inside was going wrong; often became restless and excited. In this case there was a hereditary predisposition to insanity, but the exciting cause of the attack—the stress—was the pain of the whitlow and the want of sleep caused thereby. The patient improved very rapidly after admission and was discharged recovered after 6 weeks' residence. It does not seem unreasonable to believe that early restoration of sleep in his case would have prevented the necessity for his removal to the asylum.

Loss of appetite and general disturbance and failure of nutrition occurred in a majority of the cases. It is certainly the exception in the case of female patients admitted into asylums to find a healthy condition of the lower bowel. Constipation is the rule, but it is a rule that is not confined to the subjects of mental disease. The benefit, both mental and physical, that may result from the administration of a smart purge or a soap and water enema is too well known to require more than mention; it is a commonplace of everyday practice. It is, therefore, all the more important that the present state of matters, in which certainly over 50 per cent. of the patients who are admitted into asylums are found to have their bowels overloaded and constipated, should be rectified. This may perhaps be considered a somewhat trivial or pedantic statement, but in the light of present-day investigation and discovery, the importance of toxic absorption from the intestinal canal can hardly be over-estimated, and the conditions for such absorption should be less often present than they are found to be in patients suffering from mental disorder. Careful attention to the *primæ viæ* is one of the golden rules of life. Regulation of the diet and the use of intestinal purgatives and antiseptics may be supplemented by the administration of enemata, and the injection of large quantities—40-50 oz.—of normal saline solution for absorption. The improvement that follows the employment of such treatment alone is often remarkable. A case exhibiting many of the features of toxic insanity—hallucinations,

Digitized by Google

confusion, excitement, motor restlessness, incoherence of speech, &c., with a slightly febrile or irregular temperature, unhealthy skin, foul tongue, dry lips covered with sordes, constipation, scanty urine thickly loaded with urates—if treated with fluid diet, principally milk, a prolonged hot bath at 100° F., rest in bed, a dose of castor oil or salts, administered by the nasal tube if necessary, and followed by an enema, and, after the bowels have moved, by a normal saline injection, may show a remarkable change for the better in 24 or 36 hours. A case that has reached this stage is perhaps best treated in the hospital of an asylum, but it is probable that similar treatment could often be applied with very great advantage to less advanced and milder cases, and possible also that in some of these its adoption would cut short an attack of mental disease. Loss of weight is frequently a well-marked sign of coming trouble. Dr. Clouston states that he has known of a case in which 6 stones were lost in the 6 months preceding an attack of insanity. If the condition of the teeth is bad, they should receive attention. Carious teeth are a source of continuous toxæmia. Their removal is followed in many cases by a marked improvement in the general health.

The appearance and persistence of these signs of bodily disturbance, either prior to or co-existent with the occurrence of mental features that sooner or later lead to the removal of the patient to an asylum, may not at the present time have much importance attached to them and may even be ignored. There is one factor, however, the presence of which seems to me to at once render their occurrence of the highest importance. I mean the presence of a hereditary predisposition to insanity. Given a case in which gradual loss of health occurs without any obvious cause, with sleeplessness, headache, loss of appetite, change of disposition, loss of interest, and other disturbances of a physical or psychical character, careful inquiry should be made into the family history for any evidence of insanity. Conversely, when these symptoms are noticed in a patient who is known to be of a neurotic or insane stock, they should be regarded as indications that a storm is threatening. The important point, however, and one which I think deserves emphasis, is that the occurrence of such symptoms in any patient is an obvious indication for inquiry into the family history, and that the result of such inquiry may be of great value both for prognosis and treatment.

Digitized by Google

Speaking generally, it is probable that most cases of incipient insanity present some signs of physical ill-health, of which a few have been mentioned. The treatment of these physical conditions will not be the doctor's difficulty if he can make his patient understand the reason for his treatment of them. The difficulty is more likely to be that of convincing the patient that treatment is necessary. There need be nothing special in the treatment, certainly nothing to put the stigma of mental disease upon the patient. The conditions to be treated are physical, not mental, and are to be treated like similar physical conditions in any other patient. The important thing is that they should be recognised and treated. It may be thought that patients suffering from such symptoms will not be persuaded that they require treatment, and will refuse to be treated. If a man presents himself to his doctor and is told that he is suffering from a small cancer of the tongue; if he is a reasonable man, he will have half his tongue removed at once, rather than wait and have half his jaw and neck removed. It will be said that the cases are different; that the growth of the cancer and death of the patient are inevitable, while the attack of mental disease is problematical. The possible escape of the patient, however, is no reason for the neglect of symptoms that may involve him in such an attack.

The preceding remarks have been intended to apply to the question of incipient insanity, and its recognition and treatment in general practice. In offering them to you, I am only too sensible of their incompleteness and inadequacy, and also am aware that the question, looked at from the standpoint of the general practitioner, may have many aspects and involve difficulties that have not been expressed or indicated by me. I will venture to say, however, without fear of contradiction, that the subject is one of great importance and worthy of the best consideration that we, as members of the medical profession, can give to it. Such consideration we owe to our profession and to the public.

Members of the Society may have been interested in a correspondence that has appeared in the columns of the *Scotsman* during the last few weeks upon "Wards for Incipient Mental Diseases in Edinburgh Infirmary." It was commenced by a letter on the subject from Dr. Clouston, in which he advocated the provision, by the managers of the Royal Infirmary, of such wards. The subject is not a new one, but it is a much-debated

Digitized by Google

one. Among other points raised are the following:—Are such wards necessary or desirable? if desirable, should they be attached to general hospitals? Would the patients for whom they are intended consent to enter and remain in them? Should members of the general hospital staff or mental specialists have charge of the wards? Would they require specially-trained nurses and attendants? To attempt to give an answer to these and similar questions is not within the scope of this paper. Personally, my opinion is that such wards are highly desirable; that they have been proved to be practicable and very beneficial; that in teaching centres they should certainly be attached to the general hospitals where clinical instruction is given, and that they should be in the charge of mental specialists.

As an instance of the successful working of such wards, perhaps I cannot do better than mention what has been done in Glasgow, which, as regards Scotland, stands in a splendid isolation in the matter. Glasgow has at least made the experiment, while her sister cities have been content to do nothing. The following is taken from an address by Sir John Batty Tuke to the Neurological Society of London in 1905:—

In 1890 the Barony Parish instituted what were termed observation wards for the reception of "nervous cases." The results of the experiment were generally satisfactory.

The second stage of the experiment was undertaken in 1899, when two of the largest parishes of Glasgow were amalgamated under the Parish Council, which was also the Lunacy Board, and had the supervision of all lunatics within its area. It was conducted under somewhat improved conditions, in wards set aside for the purpose in one of the city hospitals.

Between 1899 and June 1904 1345 persons were admitted, of whom 183 were sent to asylums, 86 died, and 1052 were discharged "recovered" or "relieved." Satisfied with these results, in June 1904 the Parish Council proceeded to the third stage of the scheme. It erected wards for the special purpose—a pavilion attached to one of its general hospitals. This institution contained 50 beds, equally divided between the sexes. The wards were simple in structure and furnishing; they were, in fact, ordinary hospital wards with a few side-rooms. They had no special appliances such as padded rooms. They have been in operation since June of last year, and between that date and December 1904 260 persons

Digitized by Google

were admitted, of whom 13 died, 62 were sent at once to asylums, and 155 were discharged "recovered" or "relieved."

Sir John Batty Tuke made two visits, and on both occasions found 40 patients under treatment. With one or two exceptions they were evidently drawn from the poorest class. Of these, one-fourth were suffering from alcoholism in one or other of its phases; one man was convalescent from violent alcoholic mania; the remainder were the subjects of more or less intense delirium, whose treatment in an asylum or general hospital would have been necessary, had the reception wards not been in existence. Sir John emphasised this fact because it had been loosely stated that these wards were chiefly devoted to "drunks." That was not so, because of the total number admitted since 1890 only 28 per cent. were alcoholics. The symptoms of the other cases in hospital at the dates of his visits were referred to the usual classes of insanity as set forth in asylum reports. The average length of residence was 25 days, but it might be extended to 6 weeks.

Dr. John Macpherson, Commissioner in Lunacy, writes on the same subject to the *Scotsman:* "In the Eastern District Hospital 50 of the 250 beds are reserved for cases of incipient mental disease, and are placed under the exclusive charge of a specialist, who is a lecturer on insanity in the medical school. In the Western Infirmary, which is the teaching hospital for the medical school of the Glasgow University, there is an out-patient department for the benefit of mentally-afflicted persons, where the lecturer on mental diseases at the University attends regularly and gives advice gratis to an ever-increasing number of patients."

As regards what is being done on the Continent, there have been psychiatric wards in the Communal Hospital in Copenhagen since 1863, and to each of the 20 or so universities of Germany a psychiatric clinic is attached under the supervision of the Professor of Psychology. These clinics form part of the hospital of the medical school, and afford clinical instruction for students of exactly the same kind as in other branches of medicine.

"The study of disease in all its relations would have made comparatively little progress during the last century without the light derived from the systematic observation which can only be

Digitized by Google

effectively carried out in hospitals, and it is scarcely questionable that most of that systematic observation has been originated and carried on under the stimulus due to the association of the treatment of disease with its teaching." These are the words of the late Sir John Sibbald, and they provide one of the strongest arguments for the establishment in general hospitals of wards for incipient mental disease. Asylum inmates are not the patients that students, who are destined to become general practitioners, will be called upon to treat. Under existing circumstances, the average medical graduate enters his professional career without, as a rule, having been brought in contact with a single case of incipient insanity. He receives no direct clinical teaching as to the treatment of the incipient and transitory phases of mental diseases in their earliest stages.

The medical practitioner is now expected or required to exercise the preventive side of medicine in various branches of his profession, to the great gain of the public health, and the gain would be still greater if he could do so in the sphere of mental disease. It is difficult, however, to see how the knowledge necessary for this can be obtained apart from the establishment of wards in teaching hospitals for the clinical observation and investigation of incipient cases.

In conclusion, I should like to put before you a few cases which, in my opinion, show the urgent necessity for hospital wards where acute and transitory cases of mental disorder can be treated without the patient requiring to be certified as insane and committed to an asylum. Such are most cases of delirium tremens and epileptic confusion and excitement, and some cases of puerperal fever.

A. B., aged 52, a water bailiff, was admitted in May 1907. The certificates stated that he was confused and incoherent, did not know the day of the week, or where he was, or recognise people about him; had hallucinations of hearing; laughed and talked to himself in a foolish manner. There was a history of heavy drinking for some time. On admission, he was found to be in fair physical condition; tongue was coated and tremulous; liver slightly enlarged; there was general muscular unsteadiness. He was put to bed after a warm bath, was given a large dose of salts and 30 grains bromide, and slept most of the night, but talked a little during his sleep. Two days after admission he was much

Digitized by Google

less confused; 4 days after admission he was perfectly clear and rational, and remained so till his discharge. The patient himself, 3 days after admission, said he ought to have been taken to the infirmary, since his "was merely a case of delirium tremens."

The following notes refer to a male patient aged about 25, admitted in a state of acute excitement, confusion and restlessness, from the Infirmary. He threw himself wildly about the room, rolling on the floor, struggling violently and shouting very loudly and incoherently. He was given a hot bath for 20 minutes; then fed by nasal tube with an egg in a pint of warm milk, and a large dose of salts and 30 grains bromide; he was very restless for 3 hours and required mechanical restraint, but then became quieter, and next morning, after three free evacuations, was much clearer and more composed, realised where he was and replied rationally to questions, and told how he had suffered from epileptic fits for the last six years as the result of a kick on the head from a horse. Four days after admission he was perfectly well, and a month later was discharged, having gained nearly a stone in weight. A history of alcohol was excluded in this case.

Among female patients, in addition to cases similar to the above, there are the acute mental disturbances associated with childbirth and lactation, and while for some of these cases the asylum is perhaps the best place, for others undoubtedly it is a hardship that they should be certified and sent to an asylum. Their treatment is largely a matter of diet, hydrotherapeutics and skilful nursing, not forgetting local puerperal conditions. If wealthy, they can be treated in their own homes. If not so well off, there should surely be provision for them in our general hospitals, so that they may be spared what is still the stigma of certification. Such provision would be a good thing not only for the patients, but also for the future members of our profession—a good thing for the individual and for the State.

Digitized by Google

Clinical Records.

TWO CASES OF INGUINAL HERNIA.[1]

By GEORGE HALLEY, M.B., F.R.C.S.,
Surgeon, Dundee Royal Infirmary.

D. C., aged 35, admitted on 18th December last, stated to the house-surgeon that in February last he was squeezed between a vehicle and a wall, when he felt something give in his inside at the left groin. For 2 or 3 days he had more or less pain in that region, and a swelling appeared there about the size of an egg. The pain got worse, but eventually disappeared with the swelling in 4 or 5 days. Since then the swelling has appeared intermittently, being accompanied with pain every time it appeared. No sickness nor vomiting occurred till a week before admission, when he had severe vomiting during one night. The swelling was present then. Six months before admission he had what seems to have been an attack of obstruction, 5 days' constipation, accompanied with abdominal swelling and griping pains. For 4 weeks he has had intermittent but severe pains in the middle line of the abdomen about the umbilicus.

He is a man of slight proportions, thin, and with little colour; a hackle-grinder to trade, and I know him to be in rather poor circumstances. He is not a teetotaller. Examination of the abdomen showed nothing abnormal on inspection or palpation. Tenderness over the left lower quadrant of the abdomen was noted by the house-surgeon. He has had a cough pretty constant throughout the year. One sister died of catarrh of the stomach; father died of inflammation of the lungs; mother is alive and well.

He had come in for operation for the hernia, and though no hernia was present on admission, the external ring on the left side was enlarged. I therefore had little doubt about treating this first.

On 21st December he was placed under chloroform and an incision made over the left inguinal canal, and a hernial sac was readily found having its termination at the external ring. A nodule was found constricting the sac and another on the peritoneum higher up. This was all cut away and the peritoneum sutured, as it was impossible to ligature it. The canal was then sutured, and the wound closed.

[1] Communicated to the Forfarshire Medical Association, February 6, 1908.

Digitized by Google

The pathologist reported that the specimen he had received on examination showed the nodule to be a scirrhus cancer. For 2 days after the operation the patient was troubled with a cough. The wound was dressed on the 23rd, and on the 27th looked well.

On the 31st he stated that, since admission, after taking food not of a light nature he had a feeling of heaviness, which was only relieved by vomiting an hour or two after its ingestion, as occurred on the previous afternoon. The vomited matter was just like semi-digested food. Some resistance in the left hypochondrium was noted on palpation, some pain on pressure, and an impaired note on percussion.

The wound healed by first intention, but there was still some vomiting. The vomited matter on examination showed some hydrochloric acid to be present, though small in amount.

He could only take fluid diet without vomiting. He refused further operation, though he was told that if anything could be done to relieve him it must be done at once. He left on the 18th of last month (January).

The complexion of the case was of course entirely altered and very serious. The pathologist held out little hope of our being able to relieve the patient by further operative interference. This was very likely to be true, seeing that the peritoneum had become affected; the primary growth therefore was probably too far advanced for radical treatment, yet an anastomosis was not out of the question. Our duty was undoubtedly to recommend an exploratory operation. The man's age and young family was enough to force us to try something. Errors in prognosis sometimes occur. The patient, as has been said, refused to believe that there was anything beyond heaviness after food, which he thought could be treated without operation. However, 2 days of home feeding served to convince him, and he then said he would allow anything to be done, returning to the infirmary on the 20th of last month.

He had nutrient enemata, and a little fluid diet by the mouth. On the 29th the abdomen was opened in the middle line, and a hard mass found binding the anterior wall of the stomach to the abdominal wall. A very small portion of the pyloric antrum was the only part of the stomach which appeared to be free. A large nodule was found in the posterior layers of the gastro-colic omentum, which was studded all over with little "barnacles," as also the

Digitized by Google

transverse colon. The parietal peritoneum had several larger nodules on its surface. The primary growth could not be moved from its position, so the abdomen was closed.

The wound had not been dressed till to-day (6th February), as it has given no trouble, and was found to be healing all right. His condition is rapidly becoming worse. He has more pain, and is being fed almost entirely by the rectum.

As the cancer was reported to be scirrhus, one did not look for a cancer of the intestine. The symptoms did not point to the prostate or kidney but to the stomach, and the signs indicated, unfortunately, the body of the stomach to be the part affected, though the symptoms did not absolutely exclude the pyloric orifice.

The only hope a surgeon at present has of treating cancer successfully lies in early diagnosis, but that of cancer of the body of the stomach is particularly difficult to recognise early. Dyspepsia is a common complaint, and one whose persistence only brings it before the surgeon. No doubt a more or less sudden onset, with persistence, might lead one to suspect malignancy, but the symptoms in this case hardly bear that out. It is difficult to get patients to agree to an exploratory operation early enough. Cancer of the stomach, as has been said, should be dealt with surgically before a tumour is clinically recognisable.

My second case is a more satisfactory one.

J. P., aged 50, a brickworker, admitted to the Royal Infirmary on 26th August last, said he had worn a truss nearly all his life. Fourteen days before admission the rupture had come down; he had to get the doctor to put it up. At this time he had been troubled with some abdominal pain, for which poultices were applied, and it disappeared. Examination after admission showed a thick cord-like structure behind the right testicle and cord; it was thicker at its most dependent point, and reached to the bottom of the scrotum of that side. It could be pushed up to the external ring, but when released it immediately resumed its former position. The ring was enlarged.

On 28th August last, under chloroform, this structure was removed below a ligature. It seemed like an obliterated hernial sac, thicker at its lower end, where it had a boggy-like consistence. Traction on it easily brought bowel into the canal. The canal and skin wound were closed.

Digitized by Google

Eight days after operation slight discharge with bubbles of gas escaped from the upper part of the wound. The wound had been looking well enough except for some redness around the upper angle. On the twelfth day a distinctly fæcal odour was noticed, and later fæcal discharge.

The pathologist had examined the specimen and reported it to be the appendix. He also said he thought a piece of the cæcum had been caught in the ligature.

The bowels moved naturally on the seventeenth day after operation, and again on the twenty-fifth day. On that day, the 21st September, the discharge from the wound was noted to be diminishing.

He left for home on the 18th October with his wound soundly healed.

Hernia of the cæcum and appendix seem to be fairly common, but not so of the appendix alone, and few cases like this one have been reported, though cases of strangulated hernia of the appendix are common enough. I have not come across a case of operation for hernia of the appendix which was not done for a strangulated appendix or appendicitis in a hernial sac. Out of 126 cases of inguinal hernia in children one surgeon had 3 of appendicitis in a hernial sac.

Davies-Colley, in Guy's Hospital Report for 1884, in a paper on Hernia of the Appendix alone, closes with the conclusions that the appendix may be the sole contents, may be incarcerated in an old hernia, may become adherent to the walls of the sac. Here it may remain for many years without producing any serious symptom. This latter statement applies to the above case, and probably explains the difficulty in finding any sac.

The appendix is said to be more common in a right femoral hernia than in a right inguinal, and more commonly in the reducible or irreducible forms along with other viscera, whilst in the acute examples of inflammation or strangulation it is usually alone. This is from Battle and Corner's book of 1904's date, and is not exactly borne out by this case.

Digitized by Google

NOTES ON A CASE OF PERFORATIVE APPENDICITIS IN AN INGUINAL HERNIA.

By G. F. WHYTE, M.B., C.M.,
Assistant-Surgeon, Royal Infirmary, Dundee.

HERNIA of the cæcum and appendix on the right side (inguinal or femoral) is a not uncommon occurrence, though the exact frequency is impossible to estimate on account of the sac being so often empty at the time of operation.

The appendix vermiformis may form the sole content of the sac, and statistics have been collected by Wood [1] of Philadelphia to show the frequency of the occurrence. This amounted to 58 times in 3054 herniæ, or, roughly, 1 in 53 cases.

Inguinal and femoral cases are about equally divided, with a slight preponderance in favour of the inguinal variety. Brieger (quoted by Wood [1]) collected 35 cases of appendicular hernia, 20 of which were inguinal—1 left inguinal—and 15 femoral. Bajardi's collection of 98 cases (see Wood [1]) showed 54 inguinal and 44 femoral, while Spurrier and Corner (see Wood [1]) collected 140 cases, 71 being inguinal and 69 femoral.

Clogg [2] has had a relatively large number of herniæ of the appendix, as he has found it present on 10 occasions out of 126 cases of inguinal hernia in children.

The herniated appendix is of course liable to all the diseases that are met with in its normal situation, even more liable, I think, to inflammation on account of its more exposed and dependent position. It may therefore be cancerous, tuberculous, inflamed (including all stages and varieties of appendicitis) or strangulated.

Wood [1] gives the condition of the appendix in his 100 collected cases of appendicular femoral hernia, and his statement is as follows:—normal, 11; inflamed, 4; adherent, 17; incarcerated, 22; strangulated, 18; perforated, 16; ulcerated, 5; and gangrenous, 20. Two or more of these conditions were sometimes noted in the same case.

Out of Clogg's [2] 10 cases 4 were normal, 3 were cases of appendicitis, 2 were cases of chronically inflamed appendix without symptoms of appendicitis, and 1 was a case of strangulation of the appendix alone.

Davies-Colley [3] mentions 8 cases of strangulated and inflamed hernial appendix, 3 of which were femoral and 5 inguinal. Lockwood [4] mentions one case of appendicitis in an inguinal hernial sac.

Thiéry [5] also relates a case of strangulation of the appendix which became gangrenous with suppuration in the hernial sac.

Digitized by Google

My case is as follows:—J. W., æt. 29, a fireman, admitted to Dundee Royal Infirmary on November 3, 1907.

History.—From childhood he has had a right inguinal hernia, which however had never given him any trouble or discomfort, except an occasional twinge of pain when he took an extra heavy lift. He never wore a truss.

On the 1st of November he first felt out of sorts with pain in the lower part of the abdomen, so severe that he had to leave his work. At night he took an aperient, and later in the evening vomited. He felt very weak on the following day, and stayed in bed. He now had no pain in the abdomen; he thought the vomiting had eased it. The bowels moved once that day, the 2nd of November. Towards evening, the pain came on again in the right inguinal region and got gradually worse. On the Sunday, 3rd November, he had great tenderness over the lower part of the abdomen, especially on the right side, the weight of the bedclothes even causing him pain. There had been no more vomiting. A doctor was now called in, who sent him at once to the infirmary as a case of strangulated hernia.

Previous Illnesses.—None.

Family History.—Unimportant.

Condition on Admission.—11 P.M. pulse 116, regular, small in volume; temperature 96·4°. Patient was somewhat collapsed, and complained of the pain in the right inguinal region. On examination, there was a swelling over the right inguinal canal. This swelling was not very large, but tense and very tender to touch. There was no impulse on coughing, no redness nor discolouration of skin, and no fluctuation was made out. The abdomen was quite free.

Under chloroform at 11-45 P.M. an oblique incision was made over the swelling in the inguinal canal. The fibres of the ext. oblique were divided and the various coverings till the sac was exposed and separated. The hernial sac was found to be very much thickened, and on opening it there was an escape of grumous pus. A small piece of gangrenous bowel was seen in the sac, and this was found to be a gangrenous and perforated appendix, very adherent to the sac, and still oozing dirty-looking material from the perforation. There was no constriction at the neck of the sac. The appendix was now separated from its adhesions as far up as possible without endangering the general peritoneal cavity, ligatured with silk round a healthier looking part, and the distal portion removed. The stump was touched with pure carbolic acid, and the wound disinfected as much as possible by wiping with well wrung-out carbolic swabs. A rubber drainage tube was inserted into the sac down to the stump, the cut edges of the ext. oblique were united with catgut, and the skin stitched up round the drainage tube.

Digitized by Google

The case was dressed next day and every second day thereafter till the 10th November, 7 days after operation, when there was a copious discharge of pus with smell of B. coli infection. Most of the sutures were then removed. It was now dressed every day, and by the 16th November the discharge was much less, there was no smell, and the tube was shortened. On 20th November the tube was removed, and on 29th November boro-vaseline dressing was substituted for D. C. gauze. On 20th December he was discharged healed, and there were now no signs of hernia, and no impulse felt on coughing.

Patient had three enemata on the 4th, 8th and 11th of November, all with good result; castor oil on the 13th, when bowels moved freely, and he felt more comfortable thereafter. The temperature was sub-normal from day after operation, and pulse varied from 60 to 78.

The sequence of events in this case was a congenital inguinal hernia of the appendix, which gave no trouble till it became inflamed, the inflammation going on to gangrene, perforation and abscess. It was a case in which it was extremely difficult to make an accurate diagnosis before operation. There was no doubt about there being an irreducible inflamed hernia in the right inguinal canal, and the history of acute onset and the patient's collapsed condition necessitated an immediate operation.

REFERENCES.

1. Wood, "Annals of Surgery." 1906. Vol. i.
2. Clogg. *The Practitioner*. September 1907.
3. Davies-Colley, "Guy's Hosp. Rep." 1884.
4. Lockwood, "Appendicitis."
5. Thiéry. *Bull. de la Soc. anat.* July 1892.

Births and Deaths in Eight of the Principal Towns of Scotland during January 1908.

DURING the month of January 1908 there were registered in the towns of Glasgow, Edinburgh, Dundee, Aberdeen, Paisley, Leith, Greenock and Perth the births of 4198 living children, of whom 2110 were male and 2088 female. These births are 289 more than those registered in the previous month, December 1907, and 28 more than those registered in January of last year. The births registered during the month are equivalent to an annual birth-rate of 26·9 per thousand of the estimated population of these towns, a rate which is 1·5 higher than that of the previous month, but 0·2 lower than that of the corresponding month of last year. The birth-rate of the month ranged

Digitized by Google

from 33·0 in Greenock to 20·1 in Edinburgh. In Paisley it was 31·1; in Glasgow 29·1; in Leith 28·1; in Aberdeen 26·6; in Dundee 25·6; and in Perth 20·8.

Of the 4198 births, 286, or 6·8 per cent., were illegitimate, an illegitimate rate which is 0·1 lower than that of December, and 1·0 lower than that of January of last year. The illegitimate rate ranged from 9·9 in Aberdeen to 3·5 in Greenock. In Edinburgh it was 8·7; in Perth 6·5; in Glasgow 6·4; in Paisley 6·3; in Dundee 6·3; and in Leith 4·5.

Deaths registered in these towns during the month numbered 3592; of them 1771 were deaths of males and 1821 deaths of females. These deaths are 496 more than those registered in December, and 423 more than those registered in January of last year. The equivalent annual death-rate of the month is 23·0, a rate which is 2·9 higher than the death-rate of December, and 2·4 higher than that of January of last year. The death-rate of the month ranged from 26·5 in Glasgow to 16·9 in Aberdeen. In Greenock it was 24·8; in Perth 24·8; in Leith 22·5; in Paisley 21·1; in Dundee 20·5; and in Edinburgh 19·0. With the exception of that of Dundee, all these rates are higher than the town death-rates of December.

Of the 3592 deaths registered during the month, 1366, or 38·0 per cent., were of children of less than 5 years old; and 959, or 26·7 per cent., were of persons of over 60. The former are 127 more than in the previous month and 366 more than in the corresponding month of last year; the latter are 220 more than in the previous month and 61 more than in the corresponding month of last year.

Deaths of children of less than 1 year old numbered 708. They are 19 more than in the previous month, and 123 more than in January of last year. The infantile mortality-rate of the month is 173 per thousand births, a rate which is 8 more than in the previous month, and 33 more than in January of last year. The infantile mortality-rate of the month ranged from 194 in Leith to 136 in Aberdeen. In Glasgow it was 189; in Dundee 161; in Edinburgh 160; in Greenock 153; in Paisley 152; and in Perth 149. In Glasgow and Leith this rate was higher than in the previous month, but in the remaining towns it was lower than in that month.

Deaths from the principal epidemic diseases numbered 590; they are 82 more than in the previous month, and 299 more than in January of last year. The equivalent annual death-rate from these causes is 3·8 per thousand, a rate which is 0·5 higher than that of December, and 1·9 higher than that of January of last year. This death-rate ranged from 5·7 in Glasgow and 5·4 in Greenock, to 1·2

Digitized by Google

in Edinburgh and 1·4 in Aberdeen. In Leith it was 4·0; in Perth 3·7; in Paisley 2·6; and in Dundee 2·0.

During the month 2 deaths were registered as due to small-pox; they were both in Leith. Deaths from measles numbered 359; they are 79 more than in the previous month, and 326 more than in January of last year. Of them 298 were registered in Glasgow, and 21 in Greenock. Deaths from scarlet fever numbered 18; from diphtheria 32, of which 11 were in Glasgow and 8 in Paisley; deaths from whooping-cough numbered 116, of which 53 were in Glasgow and 24 in Leith; deaths from enteric fever numbered 12; from diarrhœas 25; and from cerebro-spinal meningitis 26. Of the last-named 15 were in Glasgow, 7 in Edinburgh, 2 in Dundee, and 2 in Greenock.

Deaths from influenza numbered 6; from puerperal septic condition, 5; from malignant disease 165, of which 90 were ascribed to carcinoma, 8 to sarcoma, and 67 to other forms of cancer or to cancer not otherwise specified. Deaths from heart disease numbered 362; from apoplexies 177; from premature birth debility 85; and from alcoholism 7.

Deaths from pneumonia numbered 413, and amounted to 11·5 per cent. of the total deaths; they are 42 more than in December, and 71 more than in January of last year. Deaths from bronchitis numbered 394, and constituted 11·0 per cent. of the total deaths; they are 95 more than those registered in December, and 62 more than those registered in January of last year.

Deaths registered as due to tuberculous disease numbered 377, of them 250 being ascribed to phthisis. The deaths from tuberculosis amounted to 10·5 per cent. of the total deaths, those from phthisis to 7·0 per cent. The deaths from tuberculosis are 44 more than in the previous month, but 5 fewer than in January of last year; those from phthisis are 34 more than in the previous month, and 22 more than in January of last year.

Deaths ascribed to violent causes numbered 121. Of them 7 were suicidal, 3 being by cutting, 3 by hanging, and 1 by precipitation.

The deaths registered during the month include those of 5 males and 9 females aged 90 years and over, the oldest being a widow, aged 100 years.

Digitized by Google

Obituary.

SIR THOMAS M'CALL ANDERSON, M.D., F.F.P.S.,

Professor of Medicine in the University of Glasgow.

THE sudden death of Sir Thomas M'Call Anderson removes from the profession of medicine in Scotland one of its most striking figures. Within a few months he would have been for fifty years a Doctor of Medicine. The whole of that long period was occupied by him in unceasing work, carried out invariably with perfect regularity, and with admirable effectiveness. On the morning of the day which saw his tragic death he visited as usual his wards at the Western Infirmary, and inquired into the condition of every patient. He spoke that evening at a dinner of the Glasgow Ayrshire Society, held in the St. Enoch's Hotel, Glasgow. He spoke, as was his custom, briefly, cheerily, and to the point, and when his speech was over left the room to go home. In the corridor of the hotel, without any previous warning symptoms, he fell, and within a very brief space of time he had perished from cardiac failure.

Merely to enumerate the positions and distinctions held by Sir Thomas M'Call Anderson is to give a very inadequate idea of the man. He took his degree of M.D. of Glasgow in 1858, at the age of twenty-two, after a most distinguished career as a student. He was then for two years Resident Medical Officer in the Royal Infirmary of Glasgow, afterwards studying for a similar period in various continental universities, and coming under the influence of such men as Skoda, Kölliker, and Virchow in Germany, while in Paris he met with, and was influenced by, the most distinguished teachers of his day.

This training bore early fruit, for within a short time after he returned to Glasgow his unusual qualifications were recognised by his appointment as Professor of Medicine at the Andersonian Medical College, and soon afterwards by his appointment as Physician to the Royal Infirmary. In these positions he established so great a reputation that in 1874, on the foundation of the Chair of Clinical Medicine by the University of Glasgow, he was made the first professor of the subject, and at the same time he became a physician to the Western Infirmary, then just opened, and then, as ever since, closely connected with the teaching of medicine. He held the position of Professor of Clinical Medicine for twenty-six years, and in 1900, when Sir William Gairdner, after his long and brilliant labours, retired from the Chair of Practice of Medicine, Dr. M'Call Anderson was appointed his successor. This office he most worthily fulfilled until the day of his death.

Digitized by Google

THE LATE SIR THOMAS M'CALL ANDERSON

Photo by Lafayette.

Digitized by Google

Digitized by Google

Besides his occupation in the teaching of medicine, Sir Thomas was a specialist in dermatology. From the days of his continental training, when he attended the cliniques of Hebra, in addition to those already mentioned, this branch of medicine had been one of his favourite studies. He left his mark upon it, and his contributions to dermatological science have materially added to the present knowledge of the subject. Following in his footsteps after a long period of years, it was striking to hear from men like Lassar and Kaposi, when one first met them, and they knew one came from Glasgow—"Do you know M'Call Anderson? How is he? Convey my very kind regards to him."

It would be easy, but it is unnecessary, to give a list of the long series of contributions to medicine and to dermatology by which Sir Thomas made himself famous as a writer upon both subjects. They are familiar to everyone who is acquainted with medical literature. They brought him many honours beyond his professorial appointments. He was the first physician out of London to be made Examiner in Medicine for the British and Indian Medical Services, an honour which was bestowed on him by the War Office in 1897. He was honorary member and corresponding member of many important foreign dermatological societies. He represented his university at the International Congress of Medicine in Paris in 1900, and in 1903 he was elected to represent her on the General Medical Council, the last meeting of which he attended not long before his death. In 1905 His Majesty the King conferred upon him the honour of knighthood, and on Sir William Gairdner's death in 1907 Sir Thomas M'Call Anderson was appointed to succeed him as Honorary Physician to the King in Scotland.

A life so filled with activities, even if they were only those arising out of his profession, would have been strenuous enough for most. But Sir Thomas's interests were not confined to his profession. He occupied himself much with politics, and for several years was President of the College Branch of the Glasgow Conservative Association, to which his talent for organisation must have proved of great value. He had a broad outlook upon life, and none of the affairs of men were to him trifling or unimportant.

The work of Sir Thomas M'Call Anderson can best be summarised by a review of his distinctive qualities as a teacher, those qualities which for so long a period caused his cliniques, and, later, his systematic class, to be sought by a greater number of students than those who followed any other teacher in Glasgow. The first of those qualities was perfect lucidity, arising out of a clear grasp of the subject he had to demonstrate—a quality which at times made his

Digitized by Google

lectures seem so easy as to lead some of his students to forget the preparation which led up to them. The second was concentration upon the essential features of a case. Details were sometimes omitted, or side-issues left undiscussed, but the result was always to leave his hearer with a clearer picture of the particular disease than he would have had if his attention had been distracted by interesting and speculative divagations. It cannot be stated too often that the mind of the student is quite like other human minds—it can hold only one idea at a time. The third quality was methodical arrangement—a feature not only of his lectures, but of his whole life. It was by virtue of this that he was able to do, in every busy day, an amount of work that would have been impossible to one who employed a looser system. And last, or first, there was, as the governing principle, an absolute conscientiousness, which compelled him to carry out to the minutest detail any piece of work, however small, and however often repeated, to which he had set his hand. It happens very frequently that teachers who have been long familiar with their subject are apt to slur, or to pass over altogether, the trifling difficulties which so often are stumbling-blocks to the learner. That was never the case with Sir Thomas M'Call Anderson. However often he might have demonstrated a particular disease, his demonstration of each case of it was to the end of his life as painstaking and as clear as if he had been showing it for the first time.

In private his nature was one of exceeding kindliness, and although he never cared by any tricks of manner to emphasise the fact that he was kind, there were none who knew him well who could fail to be impressed by his gentle courtesy and his unvarying willingness to help.

W. R. J.

Meetings of Societies.

Edinburgh Medico-Chirurgical Society.

THE fifth ordinary meeting was held on 5th February, Dr. George Hunter, Vice-President, in the chair.

Mr. Caird showed a patient after removal of a submaxillary gland who had been shown at the previous meeting, and a patient after removal of half of the tongue and floor of the mouth for epithelioma.

Mr. Scot Skirving showed a large pedunculated fibroid, uterus and adnexa removed by abdominal hysterectomy from a patient aged 70, in

Digitized by Google

which a complete twist of the uterus had occurred, causing strangulation of the uterus and symptoms of acute intestinal obstruction.

Dr. Dawson Turner read a paper on "Electrolysis in Medicine and Surgery." He quoted cases illustrating the advantages of electrolysis in bringing about the percutaneous introduction of drugs. Replying to a question by the chairman, he said he had found benefit from the use of salicylate ions in painful conditions.

Dr. A. E. Morison read a paper on "One Hundred Consecutive Cases of Empyema." After dealing with the physics of pleural effusions Dr. Morison stated that 91 of his cases had been due to pleuro-pneumonia, 4 to pleuritis, 3 to tubercle, 1 to septic disease of the abdominal organs, and 1 to streptococcic infection. Mortality was 3 per cent. Surgical treatment offered the best results, immediate and remote. Aspiration was only of service when dyspnœa was great or some complication rendered operative interference inadvisable. Removal of rib was seldom necessary. The great consideration was to avoid mixed infection.

Dr. Affleck advised early exploration in doubtful cases, and said he had had many singular experiences with the exploring needle. In one case he had obtained pus from the chest which had come from an unsuspected appendicular abscess.

Dr. Russell agreed that removal of a portion of rib was unnecessary. An important symptom in empyema following pneumonia was a return of leucocytosis.

Mr. Caird said that operations for empyema in children required general anæsthesia. It was rarely necessary to excise a portion of rib, but sometimes pain in moving the tube, or flocculi of pus made this procedure advisable.

Dr. Goodall said he had a difficulty in reconciling the statement that the normal intra-pleural pressure is negative with the statement that the lung does not tend to collapse on its fixed point when air is admitted to the pleural cavity. He agreed with the latter statement, and held that the intra-pleural pressure was positive owing to the capillary attraction between the visceral and parietal layers, as had been shown by Sir William M'Ewan. When a sufficient amount of separation between the visceral and parietal layers occurred, pressure became negative, due to the unopposed lung elasticity, and the lung collapsed.

Dr. James thought that in empyema the question of the physics of the chest was complicated by adhesions. He emphasised the need for repeated puncture in cases of suspected empyema. In cases seen early it was unnecessary to excise a portion of rib.

Digitized by Google

Edinburgh Obstetrical Society.

THE fourth meeting of the sixty-ninth session was held on Wednesday, 12th February, Professor Stephenson, the President, in the chair.

Dr. Dewar brought forward a motion in regard to the "Early Notification of Births Act." After very full discussion it was agreed to convey to the Local Authority under the Act an expression of opinion as to the form of notice to be issued. It was further agreed to suggest to the Local Authority that the intimation required under the Act should not be given by means of a post-card, but that a stamped, folded notice should be issued. The meeting agreed to suggest a notification form in the following terms :—

1. Address.
2. Date.
3. Name of parent.
4. Name of householder.
5. Name of attendant.
6. Address of attendant.

Child { alive / dead } { male / female } { full time / not full time. }

Dr. Matheson Cullen, Convener of the Public Health Committee, who had taken part in the discussion, said that the Local Authority would, he felt certain, be willing to meet the views of the medical men in the city in regard to the form of notification.

Dr. William Henry Miller having shown a placenta from a case of triplets, Sir Alexander Simpson read to the Society his communication on "Egyptian Birth-chairs." After a short reference to the various birth-chairs and stools described in several works on obstetrics, Sir Alexander proceeded to describe the form of chair in use in Egypt, and the customs observed immediately prior to and after parturition. Several photographs illustrating the paper were exhibited. Sir Alexander also showed an Egyptian birth-chair and cushion.

The President expressed to Sir Alexander the thanks of the Fellows for his paper.

Owing to the lateness of the hour, the other papers on the billet were held over till the next meeting of the Society.

Glasgow Medico-Chirurgical Society.

THE ninth ordinary meeting was held in the Royal Infirmary on 7th February, and took the form of a clinical and pathological demonstration by members of the staff. There was a good attendance, and the billet included the following items :—

Digitized by Google

1. Demonstration by the physicians to the hospital:—(*a*) Dr. Middleton showed a case of spleno-medullary leukæmia; (*b*) Dr. T. K. Monro, a case of beri-beri associated with a rash, and a case of syphilitic nervous disease; (*c*) Dr. W. K. Hunter, a case of spleno-medullary leukæmia and one of splenic anæmia; also a case exhibiting undue mobility of the heart; (*d*) Dr. M'Kenzie Anderson, a case of thoracic aneurism, and a case of extreme anæmia with splenic enlargement.

2. The surgeons of the infirmary gave demonstrations in the surgical theatres as follows:—(*a*) Dr. James Adams exhibited several patients on whom different methods had been tried for suture of fractured patella, as well as cases illustrating the results of the benzine method of cleansing wounds caused by machinery and pit accidents, while Dr. A. N. M'Gregor stated briefly the indications for operation in cases of injury to the semi-lunar cartilage of the knee. (*b*) Mr. J. Hogarth Pringle demonstrated a case of myositis ossificans, and showed a patient after treatment for œsophageal stricture by retrograde dilatation. He also showed the following as card specimens:—(1) A patient operated on for melanotic sarcoma of the thigh; (2) two patients after treatment for congenital dislocation of the hip-joint; (3) a patient after treatment for empyema; (4) a patient after operation for tuberculous pelvic glands. (*c*) Mr. Henry Rutherford showed the following:—(1) A girl of 11 years, the subject of two operations for intestinal obstruction. The second operation consisted in an ileo-sigmoidostomy, and the case was complicated by diarrhœa which persisted for weeks after the second operation; (2) a man in whom, after removal of half of the tongue and lower jaw, with preliminary ligature of the external carotid, aneurism developed at the seat of ligature: this was subsequently treated by ligature of the common carotid; (3) a young man of 20 years showing deformities after thoracic resection for empyema seven years ago—(*a*) lateral curvature, (*b*) paralysis of abdominal muscles; (4) two cases of resection of the urethra—one of ten years' standing in a boy then 10 years of age—for traumatic stricture, and one in a man for impassable stricture in the pendulous portion (microscopic sections of this stricture will be shown). (*d*) Mr. Faulds showed (1) the new open catheters; (2) the interior of the human bladder, projected from cystoscope upon the screen, and demonstrated the case.

There was also a demonstration in the pathological and bacteriological departments, where Dr. Workman showed a large number of specimens, while Drs. M'Crorie and Arch. Campbell exhibited a number of things of bacteriological interest.

The special medical and surgical departments were well represented, and cases of interest were exhibited by Drs. Maitland Ramsay, Rowan, Kerr Love, Morton, Fullarton and Riddell.

Digitized by Google

The tenth ordinary meeting was held on 14th February, the President (Dr. Walker Downie) in the chair. There was a large attendance.

The evening was devoted to a lecture by Dr. Arnold Lorand, of Carlsbad, on "The Causation and Rational Treatment of Diabetes." He pointed out that there was a strong hereditary element in the disease, the children of diabetics often showing glycosuria. These children tended to grow fat early, and to have grey hair early. Minkowski and v. Mering had drawn attention to the influence of the pancreas on this disease, but he (the speaker) would go further and say its genesis was associated with other ductless glands, such as the thyroid and adrenals. Thyroid hypersecretion, as in Graves's disease, was often associated with glycosuria, and just as this disease might arise from severe mental shock, so might diabetes. Another factor was diet, especially a diet rich in proteid and starch. For instance, the poor Hindoo, who was a vegetarian, seldom had diabetes, the wealthy Hindoo not infrequently. He believed that in severe cases disordered thyroid activity was an important factor, and cited an experiment he had performed with Minkowski, where the removal of the pancreas had produced diabetes, and the subsequent removal of the thyroid had caused the disappearance of the sugar. He had also had promising results from the use of the serum or milk of thyroidectomised animals.

At the present time dietetic treatment was best, but should not be too rigid. It was not wise to get rid of the last half per cent. of sugar if one had thereby to exclude all carbohydrates for a long time. Diacetonæmia was apt to develop then. He gave chiefly meat, green vegetables, bran bread, cream, apples, oranges, peaches and sour milk, or, better still, kefyr. Thyroid extract had occasionally proved of service.

A discussion followed, after which Dr. Lorand briefly replied, and was accorded a very hearty vote of thanks for his interesting communication.

Aberdeen Medico-Chirurgical Society.

A MEETING of this Society was held on 6th February, Dr. George Williamson, President, being in the chair. Dr. J. Wallace Milne described 2 cases of resection of the bowel for the relief of acute obstruction supervening in a chronic condition of partial obstruction. The first case was that of a girl, aged 10 years, who was admitted to the Aberdeen Royal Infirmary with an intussusception of 6 days' standing. The case will be reported in full in the April number of the *Journal*.

Digitized by Google

The second case was that of a male aged 48 years who was suffering from symptoms of acute obstruction due to a malignant stricture of the descending colon. The condition of the patient was too bad to permit of resection, and a short circuit of the transverse colon to the sigmoid flexure was therefore made by means of Murphy's button. The condition of the patient rapidly improved, and on the thirty-sixth day the tumour with 6 inches of the descending colon was resected. This patient made an uninterrupted recovery. He has gained nearly 3 stones in weight and has been able to return to work. With the exception of a slight fæcal fistula his general health is excellent.

Professor Finlay contributed particulars of a case of chronic pleuritic effusion, which, after two ordinary tappings yielding respectively 66 and 47 ounces of serofibrinous fluid, was treated after Sir James Barr's plan on four subsequent occasions of paracentesis, a solution of adrenalin chloride, varying in quantity from 1 to 5 drachms (strength 1 in 1000) being injected. The quantities of fluid removed on these four occasions were 47, 75, 70 and 70 ounces respectively. There was a distinct lengthening of the periods between the tappings after the use of the adrenalin, but the pleura had filled up again, and there was thus no permanent improvement.

Mr. Gray agreed with Professor Finlay about the adrenalin treatment. Success was doubtful in cases where it was most needed. He considered that the injection of air into the pleural sac tended to reduce adhesions, and to favour expansion of the lung. He was in favour of repeated tappings in such chronic cases, rather than resection of the ribs with the risk of empyema.

Dr. Rose in this connection quoted long-standing cases of empyema, where cure resulted only after resection of ribs.

Professor Finlay, in replying, described briefly two other cases which required frequent tapping. He was of opinion that in this case resection of the ribs might be tried. He would recommend a tolerably free opening which might subsequently be extended.

Dr. T. C. Mackenzie read a paper upon "The Recognition and Treatment of Incipient Mental Disease in General and Hospital Practice," which appears on page 230.

Forfarshire Medical Association.

A MEETING of the Society was held in the Infirmary, Arbroath, on Wednesday, the 15th January, at 4.15 P.M., Dr J. A. Dewar, Vice-President, in the chair.

Digitized by Google

Dr. W. Dewar showed a boy, aged 10 years, the subject of hæmophilia, who always bled for about 3 weeks after any cut; a maternal uncle and a younger brother were also affected with the disease.

He also showed a boy 7 years of age, the third of the family to be affected with club-foot. The case was one of double equino-varus. Excision of the astragalus by Tubby's operation had been performed.

Dr. Gilruth showed a young woman, a nurse, who 7 years ago had a gastric ulcer excised, but who since then had periodic attacks of severe pain and vomiting, probably caused by adhesion of the stomach wall to the parietes. Mr. Greig, in May 1907, performed an anterior gastro-enterostomy, and since then she had remained free from all her former discomfort.

He also showed a man, aged 35, who had suffered for some years from an ulcer of the duodenum, upon whom a posterior gastro-enterostomy had been performed.

Another case shown was that of a man aged 46, who had an epithelioma removed from the sigmoid flexure, and a lateral anastomosis made.

Dr. Laing showed a woman after partial excision of the tongue for epithelioma, and also described a case of acute osteomyelitis of the tibia, in which when the bone was removed the whole of the os-calcis, being also affected, came away.

Dr. Middleton Connon showed specimens of a salivary calculus; a foreign body removed from the bladder of a hysterical woman which was found to consist of paraffin wax; and an unusual fœtal monster, in which could be seen only one foot, no legs, arms or hands. It was a twin pregnancy, and the first born was a healthy well-formed live male child.

Mr. Greig read a paper, which will appear in the *Journal*, on anchylosis after dislocation of the elbow, and described two cases.

Dr. Pirie then gave an account of the routine use of X-ray photography in private practice, and exhibited a series of photos showing many interesting conditions in bones and chest, which had occurred in his practice.

A meeting of the Society was held in the School of Medicine, Dundee, on the evening of Thursday, 6th February, Professor Stalker in the chair.

Mr. Greig showed a man, aged 67, a mechanic, who, as the result of a severe fall while at work, received head injuries which rendered him unconscious for 48 hours. The external injuries were a small

Digitized by Google

scalp wound in the frontal region, extensive bruising of the face and neck. No discharge from the ear; an examination of the tympanic membrane showed it to be intact. After recovery of consciousness left-sided facial paralysis and paralysis of the external rectus muscle in the left eye with diplopia were observed, and there was an increase of a former deafness. The probable lesion was a fracture of the base of the skull which had involved the sixth, seventh and eighth cranial nerves at their exit from the brain.

He also showed a man after excision of the patella for a chronic periostitis of that bone. He had been invalided from the naval service as unfit, but as a result of the operation he had once more a perfectly useful limb. On comparing the legs the only visible difference was a diminution in the size of the quadriceps muscle. He commented on the rarity of the operation.

Dr. Guild showed two patients who had been operated upon for cholesteatoma of the temporal bone, and Dr. Rogers showed a boy suffering from multiple arthritis, and subsequently both read notes on the conditions.

Dr. Foggie showed a man, aged 48, a horse trainer, who had syphilis when 28. Two-and-a-half years ago he had a fall from a horse, injuring his right ankle. After this a progressive muscular weakness set in, first in the right leg, and passing to the left. Then the right and the left arms became affected, and he now exhibited all the symptoms of progressive muscular atrophy, the unusual feature being the onset in the lower limbs, following the accident.

Dr. Rogers showed a man with well-marked symptoms of Raynaud's disease, who had been treated for 12 months with X-rays for an ulcer in the ear, said to be lupus, but which was probably Raynaud's gangrene.

Dr. G. Whyte showed a man with small ulcers (Raynaud's gangrene) on both ears who exhibited signs of that disease in both hands, he having been affected for several weeks with coldness and stiffness in the hands before the ear conditions developed.

Dr. Duncan read notes on the successful treatment of an obstinate case of sciatica in a lady by the subcutaneous injection of air. The condition had existed in the left leg for 4 months and had resisted all the ordinary methods of treatment by drugs, the pain which was so severe as to cause loss of sleep only being relieved by morphia. The method adopted was that recommended by Dr. A. S. Gubb, of Algiers, in an article in the *British Medical Journal* of November 9, 1907. Air was pumped into the tissues along the line of the nerve till a condition resembling surgical emphysema was produced. Repeated at intervals of 3 and 5 days, this, followed by massage of the parts, quickly resulted

Digitized by Google

in a diminution of the pain. He quoted in further detail from Dr. Gubb's paper, in which he mentioned many successful cases, and thought the method was worthy of a further trial.

Dr. Guild read notes on two cases of cholesteatoma of the temporal bone. He referred first to the origin of these pearly bodies and described their structure as consisting mainly of layers of epithelial scales. Some authorities regarded them as inflammatory products, others as tumours derived from endothelium, and call them endotheliomata, but Zeigler was of opinion that they had an origin from epidermic epithelium. In the ear they generally occur during the course of chronic suppuration of the middle ear, are accompanied by a fœtid discharge which may be very scanty and apt to be overlooked. They tend to increase slowly in size, and cause destruction of the mastoid cells and walls of the antrum. The first case was that of a boy 12 years of age when first seen, who for 3 years had been troubled with discharge from the right ear which resulted in mastoiditis for which the bone was opened. Four years after a swelling was seen in the ear, which proved after removal to be a cholesteatoma. The second case was that of a girl aged 12 years, who, when first seen, had a large œdematous swelling over the right mastoid, and the tympanic cavity swollen and obliterated. There had been an intermittent discharge for 6 years, but no pain until 14 days before coming under observation. The radical mastoid operation was performed, and a cholesteatomatous mass removed. Both specimens were exhibited.

Dr. Rogers read notes on the case of multiple arthritis he showed. The patient was a boy of 6½ years of age. There was nothing special in the family history except that his mother had once suffered from rheumatism. Between the age of 4 and the present illness in December 1907 he had 3 attacks of what was said to be rheumatism with mitral regurgitation. His present condition showed swelling of wrists, knees and ankles, and, to a lesser extent, of the elbows, evidently caused by a thickening of the tissue round the joint, with limitation of movements, no creaking or effusion into the joints; there was also some swelling over the cervical spine. There was enlargement of the glands in axilla, neck, and groin, no enlargement of liver or spleen. The deep and superficial reflexes were exaggerated, with wasting of the muscles of the limbs. There were occasional periods of pyrexia, a moderate amount of anæmia, and the tuberculin test was negative. The condition was similar to that described by Still as rheumatoid arthritis in children. Dr. Rogers objected to the name as being a misleading one, and was inclined to consider the condition as microbic in origin.

Digitized by Google

Recent Literature.

CRITICAL SUMMARIES AND ABSTRACTS.

MEDICINE.

By EDWIN MATTHEW, M.A. M.B., F.R.C.P.,
Assistant Physician, Leith Hospital.

The Present Clinical Position of Vaccine Therapy.

Vaccine treatment introduced to medicine an entirely new therapeutic method. It has now passed its initial and experimental stage, and has by many hands had a thorough and exhaustive trial, and a brief résumé of its usefulness and application to disease will indicate the measure of success it has so far attained.

Like many another new method it has been hailed by some as a panacea likely in time to cure all ills, and by others more sceptical condemned as useless. At the present time it is finding its true place midway between these conflicting expressions, and is recognised as an established therapeutic agent likely in many cases to lend additional help in the fight against disease.

The first successful step in the attack on bacteria dates from the discovery of the diphtheria antitoxin by Behring in 1893; this was followed by the discovery and use of other specific antisera.

Sera were then employed in typhoid, cholera, and other diseases, but the same amount of success as in diphtheria did not follow their use. This was particularly evidenced where the sera were employed as curative and not prophylactic agents. It has long been recognised that after an attack of measles or small-pox the individual becomes protected or immune for a certain time. After the failure of antisera in typhoid and cholera and other conditions attention was directed to the possibility of therapeutic benefit being derived by active immunisation in imitation of what actually takes place in measles and small-pox.

Koch was the first to attempt the cure of a condition by active immunisation. This he did in his tuberculin treatment of pulmonary phthisis and other tuberculous affections. His efforts did not meet with the expected results, not from inherent flaws in his reasoning or methods, but more because at that time the proper dosage and suitable intervals of injection had not properly been worked out. After Koch's comparative and temporary failure not much was attempted for a time in this line. In 1902, however, Sir A. E.

Digitized by Google

Wright stimulated afresh the work of active immunisation as a curative agent. He published six cases in the *Lancet* in which he had adopted the vaccine line of treatment—localised bacterial invasions being treated with success by inoculation of the corresponding bacterial vaccine.

Following Wright in his methods, and obtaining equally successful results many workers have entered the field of vaccine therapy. At the present time it is possible to formulate on their experiences some idea as to the usefulness and limitation of this new therapeutic method.

Sir A. E. Wright has briefly and well defined the principle underlying all vaccine therapy as "the scientific exploitation for therapeutic uses of the protective machinery with which the body is equipped."

Antitoxins and antisera are obtained from animals, and act by neutralising the toxic products of bacteria. A vaccine, on the other hand, depends on the individual. It induces in the individual a manufacturing of substances that will destroy the bacteria that have invaded him. A vaccine introduced into the body in a suitable dose, and at proper intervals, will initiate the production of antibacterial substances that will destroy them.

The term vaccine has, of course, nothing to do with the real vaccine used against small-pox. The French have long recognised the term vaccine as denoting any virus that is used for immunisation, and this is the sense in which the term "bacterial vaccine" is employed.

If the broad principle of vaccine therapy be as stated, there ought to be no limit to its use in medicine and surgery—so far as bacterial conditions are concerned. Empirically this is so, and no doubt with increasing correctness of methods and their application more and more successes will be recorded of bacterial conditions cured by vaccines.

Wright, in his original communication to the *Lancet*, gave his experiences in certain localised bacterial invasions due to a staphylococcus, but even then hinted at the possibility of vaccine therapy having a much greater range of action. Already for some years this has been the case, and a further extension may be confidently looked for in the future.

Many conditions have now been successfully cured or improved by vaccines, and a brief reference to the experiences of certain workers will give an accurate idea of the present value of this new method.

1. *Tuberculous Infections.* — As has been said, Koch's original tuberculin did not produce the beneficial results he anticipated. The failure was the result of inefficient means of checking the proper dose, or of ascertaining the patient's resistance as measured by the opsonic index. This can now be done, and tuberculous

Digitized by Google

conditions of all sorts have been cured or improved by injections of a suitable dose of tuberculin.

Wright, for example, has had good results in tuberculous adenitis, tuberculous knee joints, caries of cervical vertebræ and pulmonary tuberculosis.

In the Massachusetts General Hospital, Floyd and Worthington have employed tuberculin as a routine therapeutic measure in tuberculous cases. Cases of phthisis that had undergone treatment at sanatoria for months, and had become stationary, still having active signs of phthisis, began very soon to clear up by the use of tuberculin, and they record a considerable number of cures. With them, too, the treatment with tuberculin of tuberculous iritis, tuberculous adenitis, tuberculous prostatitis, and lupus has given very encouraging results.

The same good results have not so far been recorded in bone tuberculosis.

Beebe and Medalia have also reported fully their experience in tuberculous patients in enlarged tuberculous glands of the neck, in tuberculous dactylitis in children, and in phthisis pulmonalis. The gland cases gave the most satisfactory results, but marked improvement was noted in all their cases.

When we have records of improvement and sometimes cure in such serious conditions as caries of vertebræ, tuberculous prostatitis, bad cases of phthisis, I think it may be argued that, in tuberculosis, vaccine therapy at least is a hopeful additional therapeutic agent, which may promise in future to supplement or even supplant the surgeon's knife.

Vaccine treatment in tuberculosis, it should be noted, should not be hurried, the rule being that normal doses of tuberculin over brief periods of time hold out the best hope of success.

Localised Bacterial Infections.—Agreement is almost universal among workers with vaccines that localised bacterial infections do well under this form of treatment. Such conditions as multiple boils, acne, carbuncle, sycosis, are markedly susceptible to vaccine treatment, and the largest number of recorded successes I can find has been in these diseases.

Wright's original six cases were of this nature, as also other six published three and a half years later, and many subsequent cases. On the Continent they are satisfied with their results in localised infections, and in America, Bouldon, Floyd and Worthington, Richardson, Lee and others, have all recorded many cases in which cure or improvement has followed the proper use of a vaccine in these cases of staphylococcal and streptococcal infection.

In certain forms of pustular acne, Richardson of Boston finds that

Digitized by Google

a stage of improvement is reached beyond which no more takes place. The principle of treatment must not be blamed in these cases. Probably the proper organism has not been isolated, and so the appropriate autogenous vaccine was not available. These conditions hold out at present the best hope of success, because the particular staphylococcus or streptococcus at fault can readily be separated, and an autogenous vaccine readily prepared.

Cases of Systemic Infection.—So far systemic infections hold out less hope of cure or benefit than do the localised lesions. Still something has been done. Wright has reported several cases of endocarditis cured by vaccine therapy, and others have been following up his results. In such cases of systemic infection the sooner inoculation is begun the better, and in doubtful cases regular cultures of the blood should be made to obtain if possible the causal organism. No doubt better results will follow more extended observations, and it must be remembered vaccine therapy does not prevent the carrying out of the usual routine treatment, and may be just the additional help nature requires to cure the condition.

Typhoid.—Observers are not at one as to the position of vaccine therapy in the case of typhoid, and even as to the benefits of inoculation as a preventative.

Richardson of Boston has made many observations and concludes that (*a*) the course of typhoid, if treatment be instituted early enough, can be favourably influenced by inoculation of specific bacterial products. (*b*) Inability to make an absolute diagnosis in the early days of the disease has been a severe handicap to specific treatment. (*c*) The percentages of relapses in typhoid fever has been markedly reduced by inoculation. He has had 163 cases treated by routine methods, with 35 or 21·4 per cent. of relapses, as compared with 40 inoculated cases with 2 or 5 per cent. relapsing.

From his observations he thinks the results at any rate suggestive and encouraging.

A vaccine may be made for every pathogenic micro-organism that can be grown *in vitro;* numerous attempts consequently have been made to obtain a cure by this method in cases where other organisms are present.

Numerous clinical conditions, many of them serious, have been successfully combated by a vaccine, and from a large number of records it may be interesting to mention a few.

Pneumococcal Infections.—The technic here most observers consider more difficult than in the case of the staphylococcus and streptococcus; still there are many reports of successful cures. Such conditions as abscess of the thigh, several of empyema, chronic painful condition of the joints with deformities have all done well under vaccine treatment.

Digitized by Google

2. *Streptococcal Infections.*—There are many records of cure in cases of streptococcal infections—in such conditions as puerperal sepsis—numerous cases—cervical abscesses, and localised superficial lesions.

3. *Gonococci.*—Vaccine therapy has been found efficacious in gonorrhœa and in gonorrhœal arthritis. In many severe cases of this latter condition it has been of great service.

4. *Bacillus Coli.*—Most writers are agreed that infections of the urinary tract are among the most favourable for vaccine treatment. The bacillus coli is in most cases the cause of the condition. In the literature I find recorded many cases of acute cystitis due to bacillus coli that have been speedily cured by an autogenous vaccine. Similar treatment has also been effective in old appendicitic sinuses and bowel conditions due to this organism.

5. *Staphylococci.*—In addition to numerous localised skin infections staphylococci are at the root of many other conditions, and in empyema, puerperal sepsis, abscesses, hip-joint abscesses, exfoliative eczema, cures have been obtained by vaccine treatment. All are agreed that in abscesses of all sorts, the wounds—after the abscesses have been evacuated by the surgeon—heal much more quickly when a vaccine is subsequently employed.

6. *Mixed Infections.*—In certain conditions more than one organism may be present, and in these too vaccine therapy has been of use. Beebe and Medalia have published a number of cases in which they have successfully treated these mixed conditions. In these cases the various organisms are searched for and the opsonic index of the individual taken for each. If for a particular organism the opsonic index is below normal an appropriate vaccine is made and inoculated. Or it may be that two indices are below normal and consequently two vaccines are required.

They describe seven cases in which they have been successful in producing cure or benefit. A case of empyema—staphylococcus and pneumococcus; pleurisy followed by abscess of rib—staphylococcus and tubercle bacillus; caries and abscess of rib—tubercle bacillus and staphylococcus; ischio-rectal abscess—bacillus coli and staphylococcus; cystitis—bacillus coli and staphylococcus in an old man of 75; ileo vesical fistula, bacillus coli and staphylococcus.

Such being the reported successes with this new method of vaccine therapy it is essential to inquire how far it is possible to bring it into general use so that it may be of service to the practitioner.

Wright, who has done so much to stimulate its use in all bacterial conditions, continually controls his observations by a regular and close study of the opsonic index, and many follow his methods. The calculation of the opsonic index is, however, a long and laborious and

Digitized by Google

uncertain process, and is not a control that could be constantly carried out by the practitioner. Other observers, however, have cast doubt on the accuracy and necessity of this estimation in vaccine therapy, and Lee of Boston even talks of the uselessness of the opsonic index as a therapeutic indicator. Bouldon of New York acknowledges that determinations of the opsonic index are very difficult to make and are subject to a number of unavoidable errors. Widely divergent results are often got by "duplicate determinations of the same serum at the same time and in identical conditions." The opsonic index, too, and the clinical course of the disease do not always run parallel. He believes, on the whole, that opsonic indices are unreliable, and should not displace clinical observations in controlling treatment by vaccines. For the practitioner not skilled in opsonic indices a close study of the clinical symptoms forms a sure guide for him in the use of vaccines. They greatly assist him in regulating the dose of vaccine necessary and the intervals at which additional doses are necessary. The organism at fault is usually not difficult to isolate and an autogenous vaccine not difficult to prepare, and if the latter cannot be got in many cases a stock vaccine of the organism in question may be successfully used. To the practitioner this new method now holds forth at any rate a prospect of additional necessary help to his therapeutic armamenterium. The published successes warrant and even demand from him a consideration of the use of vaccines in all cases of bacterial infection.

SURGERY.

By LEWIS BEESLY, F.R.C.S.

Post-Anæsthetic Acetonuria.

During the last few years considerable attention has been devoted to the presence of acetone in the urine, chiefly on account of its importance in connection with surgical anæsthesia.

The subject is of particular interest to surgeons, and therefore the interesting paper by Young and Williams on "Post-Operative Acetonuria," which appeared in the January number of *The Boston Medical and Surgical Journal*, merits criticism.

The article is illustrated with examples of the condition following the administration of ether for operations performed in the Gynæcological Wards of the Boston City Hospital.

The method adopted was as follows:—The urine, drawn off by

Digitized by Google

catheter just before the ether was started, was examined in each case, a second specimen was drawn off and examined 12 to 14 hours after operation, and when acetone was present the test was repeated every other day until it disappeared.

The test employed was the qualitative nitro-prusside test. (Results based on this technique, which is useful from a clinical standpoint as demonstrating the presence of acetone in the urine, are open to fallacy, as they fail to show the true condition present, which can only be recognised by a careful quantitative examination carried out daily.—L. B.)

Young and Williams arrange the cases examined under three heads:—First, laparotomies, 52 in number, in which it was found that acetonuria was only present twice before operation. The first of these patients suffered from adhesions following an acute attack of pelvic inflammation, the second was one of double pyosalpinx.

A careful record was kept of the amount of vomiting after these laparotomies, and it was found that in general there was more vomiting in the series of cases where acetonuria occurred. On the other hand, in 4 cases in which there was practically no vomiting acetone was present in the urine.

Six patients had considerable and prolonged vomiting. Of these, 1 had no acetonuria at any period of the convalescence; 2 had none 18 hours after the operation, but a reaction developed on the third day; the other 3 had acetonuria from the beginning—two until the fifth, the third until the seventh, day. In these cases the reaction became more pronounced on the third day than on the first day.

It was observed in those cases where the vomiting was most prolonged the acetone reaction was present the greatest length of time, and that in the two cases in which it did not appear until the third day the vomiting did not become excessive during the first 24 hours, but began to give trouble on the second day.

(These cases come clearly under the designation of delayed acetone excretion, that condition in which the acme of excretion is not reached until the second or third day after operation; during this period the signs of intoxication present themselves.—L. B.)

It is of interest that one of the above-mentioned patients, who developed acetonuria on the third day, had been curetted under ether two weeks previously, after which acetone was found in the urine on the first day; there was however no disturbance of convalescence.

(The interpretation of this apparent alternating effect of the same anæsthetic on the same patient on different occasions has yet to be explained, and constitutes the weak spot in the theory of idiosyncrasy

Digitized by Google

when applied to delayed chloroform poisoning. This alternation is easily understood when the second anæsthesia follows within a few days of the first, but is not so easy of explanation when there is a prolonged interval between the administrations.—L. B.)

The second group of cases examined consisted of patients who had had some minor operation such as curettage, trachelorrhaphy, perineorrhaphy, or vaginal section. Fifty-four urines were examined, and 14 were found to contain acetone before operation; none of these suffered from any disturbance of convalescence.

The third series of observations were carried out on the next 70 patients admitted to the hospital. Twenty-six of these had acetonuria. The condition occurred most frequently in those cases where there was more or less disturbance of metabolism, notably in puerperal sepsis, hyperemesis gravidarum, miscarriages, many of which were septic, carcinoma and eclampsia, while in those who may be supposed to have suffered from no disturbance of metabolism, namely, those admitted for lacerations of the cervix and perineum, retroversion, fibroid, and extra-uterine pregnancy, it was rarely found.

Of these 70 patients, 16 had subsequent laparotomies; in all but 2, previously mentioned, the acetone had disappeared before the time of operation; in 2 others there was acetonuria on admission, and again after operation; in 2 a reaction was present after admission, but not after laparotomy. In one of these, however, there was considerable vomiting, with rapid pulse and slightly elevated temperature, but terminating in recovery. In 4 there was a reaction after operation but not on admission; and in the remaining 6 no acetone was found either on admission or after operation.

(The striking difference between groups 2 and 3 on the one hand, and the series of laparotomies on the other, in regard to the frequency of ante-operative acetonuria, is highly interesting. The authors suggest that the careful preparation of the laparotomies before operation may account for the low percentage of ante-operative acetonuria. This is extremely probable, and, as has been pointed out elsewhere, the preparatory treatment of the alimentary canal, coupled with a free administration of alkalies, has much to do with an uneventful convalescence.—L. B.)

The article contains a short résumé of the history of acetone, and attention is drawn to the researches of v. Jaksch, Muller, Kausmaul and Schwartz who have shown that large quantities of acetone may be exhibited without harmful effects, and may be present in excess in the blood without producing marked symptoms or anatomical lesions. As to the origin of acetone, the authors agree with the recent views expressed by M'Leod, who says, referring to the group of acetone

Digitized by Google

bodies: "At present it is uncertain whether fat is alone their source, or whether they may not be the products of a synthetical process."

The clinical picture of so-called acetonæmia is thought to be the result of an acid intoxication with diacetic and oxybutyric acids, the supposed antecedents of acetone in the process of metabolic decomposition.

The writers have carried out investigations on the lines pointed out by Ladd and Osgood, who recently advocated the use of a plain pad of gauze for the administration of ether instead of a cone, the result of this method being a great decrease in the percentage of patients with acetonuria.

That acetone is usually associated with some disturbance of metabolism is readily seen from an examination of Kelly's list of conditions in which it has been observed: late stages of diabetes; starvation; malignant growths; digestive disturbances; septic processes, general or local; infectious fevers; pregnancy with dead fœtus; in certain psychoses; auto-intoxication; chronic morphinism; phosphorus poisoning; following anæsthesia; injuries to cerebro-spinal system; shock due to injury; cases associated with fatty liver and uræmia.

Acetonuria is much more common in children than in adults. In children metabolism is much more active. The child has not only to replace the amount of tissue used up each day, but also has to provide for growth. It is natural, then, that children should be more susceptible to changes of metabolism, and that therefore acetonuria should be found more frequently than in adults.

The relationship of acetonuria to disturbances of the gastro-intestinal tract is still further established by the high percentage of acetonuria met with after abdominal operations as compared with others, some of which were plastic operations in which the duration of the anæsthesia was greater than in many of the laparotomies. It was also noticed that the duration and occurrence of acetonuria usually, although not constantly, bore some relation to the occurrence and duration of the vomiting.

Having drawn attention to the frequency of acetonuria resulting from metabolic disturbances, the writers point out that, excluding diabetes, the reported cases of poisoning, with few exceptions, have followed the use of anæsthetics. They ask why, if acetonuria is the result of an acid intoxication, symptoms do not occur more frequently without the administration of an anæsthetic? and also what is the explanation of those cases in which it has been reported without operation? because no evidence has yet been introduced of any diminution of excretion in the latter circumstances.

(The answer to the first part of the question is that cases of poisoning

Digitized by Google

do frequently occur without the administration of an anæsthetic, notably in the cyclic vomiting of children; also that symptoms of poisoning from acid intoxication can often be recognised if carefully searched for in many of the acute infective diseases, though doubtless on superficial examination of the patient they are masked by the more prominent symptoms of the original causal disease.

The latter part of their question dealing with diminished excretion can also be answered. They refer to my observations published in 1906, but fail to appreciate the distinction I draw between *delayed* and *diminished* excretion which is indeed vital, as symptoms of poisoning occurred during the former condition whereas death followed the latter.

I explained that the rate of acetone excretion acted as an index of the severity of the intoxication, and in normal cases attained its maximum within 24 hours. The more rapid the excretion the better the prognosis.

In *delayed* excretion the intoxication was greater than the eliminating powers of the kidneys, suddenly taken at a disadvantage, could immediately overcome, and an interval of a day or more was necessary for the recovery of the excretory balance. During this interval symptoms of poisoning occurred only to disappear on the return of proper elimination.

In *diminished* excretion the intoxication from the original cause was still more intense, and, when combined with the intoxication from the formation of those precursors of acetone due to the anæsthetic and also the direct irritant action of the anæsthetic on the cells of the liver and kidneys, a fatal result followed.

It is not improbable that, provided the intoxication is sufficiently intense, a complete collapse of the excretory system occurs. But until observations on the acetone excretion by means of the quantitative method are carried out, this must remain surmise.

The rarity of death from cyclic vomiting only demonstrates the power of recovery possessed by the kidneys and liver and the intense intoxication necessary to destroy it.—L. B.)

Young and Williams suggest that the symptoms and signs of acetonæmia are probably septic in origin because the greater proportion of fatal results reported have occurred in acute infective conditions.

They overlook, however, the cases reported by Stiles and Macdonald, which were bacteriologically examined and proved aseptic. Neither was there mention of sepsis in the series of cases published by Brackett, Stone and Low.

Digitized by Google

OBSTETRICS AND GYNÆCOLOGY.

By R. C. BUIST, M.A., M.D., &c.,
Gynæcologist, Dundee Royal Infirmary.

Pyelitis in Pregnancy, Labour, and Puerperium. (Albeck. Hospitalstid. 1907. Page 870).—Albeck has made a systematic review of the hospital cases for almost 5 years and undertaken a personal investigation of a considerable series, and the following notes of some of his results should be of interest. In 7684 cases pyuria occurred 450 times. It was relatively a little more frequent in primiparæ, and much more common in the second than in the first half of pregnancy. In a systematic personal investigation of 392 cases he found 5 times pyuria with fever, 18 without fever, and 32 with bacteriuria. Bacillus coli occurred 43 times in pure culture, streptococcus 9 times, and staphylococcus 3 times. He found in the casebooks, and from his own observation, 52 cases of pyuria with fever. These had complaint of pain in the kidney region 31 times on the right side, 9 on the left, and 12 on both. In 20 cases the fever began in labour. In 36 cases without fever he found bacillus coli alone 31 times, streptococcus twice, staphylococcus once, and bacillus coli with staphylococcus twice. The 32 cases of bacteriuria gave bacillus coli 24 times, streptococcus 7 times, and staphylococcus once. The course of symptoms gave evidence of a tendency to an ascending infection.

Case of Recurrent Jaundice in Pregnancy. (H. C. Ringsted. Hospitalstid. 1907. Page 985).—The patient, a woman of 38, had had two normal pregnancies, and in 1900 miscarried at the sixth month in the following illness. Six weeks before admission she had sharp pains in the liver region, lasting 10 to 15 minutes, with loss of appetite and yellow vomit. After 2 weeks she had some shiverings, and 2 weeks later the pain left the liver region and passed to the lower abdomen; for 4 weeks she had frequent painful micturition, and for 13 days constipation. The day before admission she had a profuse discharge of liquor amnii but no bleeding. On admission she had jaundice and was markedly fevered and had stinking urine with marked pus and albumen. She miscarried next day and the secundines were offensive. There was no tenderness or distention of the gall-bladder. Two days later she had saline injections, curettage, and disinfection of the uterus, and the bladder washed out with 1-300 solution of silver nitrate. She gradually recovered, and in 3 weeks went home well, but with albuminuria. Two years later she again miscarried in the sixth month and thinks she had jaundice. In 1904 she again miscarried in the sixth month. She had severe vomiting which became complete a week

Digitized by Google

before the abortion, and she had jaundice. The vomiting continued. The lochia was slightly offensive, but she had no fever. She had a pustulous eczema in the genital region. A month later the urine still contained pus and ·5 p. mille albumen.

In 1906 she was well till the eighth month of pregnancy when she took suddenly ill with shiverings, vomiting, and attacks of pain from the loins to the symphysis. She was fevered, and complained of itching, and had a scarlatiniform rash on the extensor surfaces of the limbs which later extended to the whole body and was specially marked on the abdomen. The skin was lightly icteric, and she was persistently constipated. The temperature had become normal. In spite of slight general improvement she was dull and had some shivering and scanty urination, and labour was induced with Bossi and then the bag. The child weighed 3 lbs., and died in 12 hours. The puerperium ran a normal course though slight pyuria persisted. The author recognises that the pathology of the case is not adequately represented in his title.

Complete Congenital Absence of Permanent Teeth. (Thorvald Kiaer. Hospitalstid. 1907. Page 389).—The patient, a man of 25, came for dentures and was found to have five milk-teeth (53,135) in the upper jaw, none in the lower. A radiogram showed no trace of the permanent teeth. The jaws were of senile form. He was born after a normal pregnancy without nails on fingers or toes. Anæmic as an infant, he had measles and whooping-cough, and at 8 years simple diphtheria. The milk-teeth in the lower jaw had come out in boyhood, and except those left he had lost those in the upper jaw at 14. The paper contains a list of the recorded cases of this rarity, and it illustrated, with the moulds, the radiogram and photographs of the patient with and without his dentures.

Case of Situs inversus Viscerum in a Three-Year-Old Girl. (Adolph H. Meyer. Hospitalstid. 1907. Page 857).—Meyer records a new case in a girl under treatment for bronchitis. The apex beat was in the right mamillary line, and the liver and splenic dulness were on the left and right side respectively. The condition was confirmed by a radiogram, which is reproduced.

Statistics from the Post-mortem Room at Oresund. Oscar Horn. *Genital Tuberculosis.* (Hospitalstid. 1907. Page 637).—In 1906, of 321 sections, 161 showed pulmonary tuberculosis as the cause of death, 70 being in females. There were 7 cases of genital tuberculosis, and 1 urogenital. Details of 6 cases are given.

1.—F., 27, married. Pulmonary, intestinal, and peritoneal tubercle. Marked pelveoperitonitis. Uterus and adnexa matted. Ovaries shrivelled. Uterus slightly enlarged. Tuberculous endometritis

Digitized by Google

without giant-cells, but with TB. The ovaries gave no definite histological picture of tuberculosis, but the right showed some atypical, and the left distinct TB.

2.—F., 33, married. Pulmonary and intestinal tubercle. Tuberculous pelveoperitonitis. Right ovary normal size, left twice as long. Uterus normal size. Slight injection of uterine mucosa. Histologically round-cell infiltration in uterus. TB. in uterus and both ovaries.

3.—F., 38, married. Pulmonary, laryngeal, and intestinal tubercle. Slight tubercular pelveoperitonitis. Uterus slightly enlarged, with mucosa lightly injected, and 3-4 miliary plaques. Some round-cell infiltration in uterus and ovaries. TB in both.

4.—F., 20, single. Pulmonary, laryngeal, and intestinal tubercle. Marked pelveoperitonitis with matting of uterus and adnexa. Right ovary caseous, left shrunken and tube caseous. Uterus small, with tubercular patch on posterior wall. Only one giant-cell found in uterus. TB. Left ovary no TB.

5.—F., 22, single. Pulmonary and intestinal tubercle. Slight pelveoperitonitis. Partial matting of uterus and adnexa. Tubes caseous. Uterus showed marked caseous tuberculosis to the os internum. Right ovary showed TB, left a few, deformed but distinct.

6.—F., 28, married. Pulmonary and intestinal tubercle. Marked tuberculous pelveoperitonitis. Tubes caseous. Uterus normal size, mucosa markedly injected with scattered miliary foci. Histologically the uterus showed caseation, giant-cells, and numerous round-cells. Numerous TB. Right ovary TB uncertain, left distinct TB.

Except in the case specially mentioned, tuberculosis of the ovary was not evident microscopically.

Total Extirpation of the Urinary Bladder with Double Lumbar Ureterostomy. (Thorkild Rovsing. Hospitalstid. 1907. Page 709). —Extirpation of the bladder for malignant disease has been performed about 30 times, the ureters having hitherto been treated in 3 different ways: (1) left in the wound; (2) implanted in the bowel; (3) in women, implanted in the vagina, with subsequent colpocleisis. Of these only the last has given fairly satisfactory results. Rovsing has performed a new operation, and in this paper he describes a case in a woman and 2 in men. The difference between the operation in the two sexes depends on the prostate gland which is removed along with the bladder. The bladder having been filled with 200 cc. 1 per cent. phenosalyl solution the patient is put in the Trendelenburg position. An incision convex downwards lays bare the attachment of the recti, and each is loosened in ¾, or, if need be, the whole of its attachment. The peritoneum is separated bluntly from the posterior wall of the bladder, and the

Digitized by Google

bladder detached anteriorly. The ureteral insertions are sought, and the ureters divided by thermocautery between ligatures after being hooked up with the finger. The strands where the inferior vesical arteries run are sought and ligatured and the urethra clamped with small forceps and divided, and the bladder lifted out as a closed cyst. This part of the operation takes ¾ of an hour. The wound is drained with Mikulicz drain, the packing being with 1 per cent. silver nitrate gauze. The recti are sutured with aluminium-bronze sutures.

The ureterostomy is now undertaken. An 8-10 cm. incision is made from the edge of the erector spinæ out and forwards between the twelfth rib and the crest of the ilium, and the lumbo-dorsal fascia is opened and the ureter sought with the finger and hooked up till it projects in the wound, where it is allowed to hang free. It is not to be cut off at skin level, but allowed to project, when it will form a papilla from which the urine will drop. A No. 12 catheter is inserted, and the ureter is surrounded with gutta-percha tissue and passed into a rubber stall. The ureter adheres in the lumbar wound, and a special bandage with collecting tubes and a urinal is fitted. The first case, a single woman of 34, was operated in May 1906, and has gained 20 lbs. in weight and is able to work. The second patient, a man of 67, a week after the operation, in September 1906, died of uræmia, and was found to have atrophic kidneys and myocarditis. The third, a man of 57, was operated on in February 1907, a month before the report was made.

OPHTHALMOLOGY.

By ANGUS M'GILLIVRAY, C.M., M.D., F.R.S.E.,
Lecturer on Ophthalmology, St. Andrews University; Surgeon, Dundee Eye Institution; Ophthalmic Surgeon, Dundee Royal Infirmary, &c.

Tuberculosis of the Cornea and Iris.

Dr. A. Verwey (*Ophthalmology*, October 1907) wished to find out experimentally if the bringing in of air into the anterior chamber influences beneficially tuberculous affection of the eye, and why. Our knowledge of ocular tuberculosis has enlarged much since Leber spoke of the mitigated form in 1891. As to the way of infection, the author thinks that hematogenous infection happens frequently, but that ectogenous infection cannot be excluded; especially the similarity of the experimentally made cornea and iris tuberculosis, with the clinical observations, strengthens this last statement. Beginning ocular tuberculosis is frequently mentioned lately, probably because these conditions

Digitized by Google

will be observed much more readily in the eye than elsewhere. The most important diagnostic symptom for tuberculous iritis is the localisation in the middle or ciliary part of the iris, often in the inferior part, usually of grayish-yellow colour, attended with little pain.

Verwey next gives the histories of 14 cases from Professor Koster's clinic at Leyden. They all last long and relapse often. The disease is seen mostly in youth, and the tension of the affected eye almost always diminished. Two patients died, one from brain tuberculosis, the other from lung tuberculosis; they were very tuberculous persons. These ocular affections do not seem to endanger life very much. Six times the disease affected both eyes; 5 times the one eye and 3 times the other eye showed suspicious symptoms. Heredity is mentioned in 6 cases. Tuberculous affections in other places were found 9 times; the examination proved negative in 3 cases. Only one patient had choroiditis disseminata without showing the picture of a tuberculous choroiditis; the changes of two other patients were insignificant, while one developed a choked disc through metastasis in the brain. Bacilli could be proved through experiments on animals with tumour tissue; 3 times this examination was negative. A pure culture grew from the suspicious material, which showed microscopically to be tuberculous from one patient; bacilli were found here in the aqueous humour with the second insufflation of air. With another patient they were looked for in vain. The aqueous humour of 2 patients was inoculated on glycerine-agar without results, and inoculation of a rabbit's eye with this humour of the second patient was also resultless. The diagnosis was made pathologico-anatomically in one patient. Just these 2 mentioned cases, where bacilli were looked for in vain, show that this does not weaken the diagnosis; for both the tuberculous nature of the disease was proved, and still cultures with the aqueous humour did not germinate and did not make the rabbit's eye tuberculous. Seven patients showed a tumour of the iris with grayish disseminations in the surroundings. Four patients showed yellowish discolourations in the irido-corneal angle and grayish infiltrations in the cornea with the peculiar aspect. Nearly all cases of the iris were on its inner side and left the pupillary margin free, at least in the beginning. The therapy cannot be called uniform. Radium and inunctions were practically without success; atropin and iodoform ointment did not show much benefit. The consequent treatment with tuberculin was done on 8 patients; these were repeated with intermissions of 4 to 7 days. Sometimes the air was still present after 2 days, sometimes had disappeared after some 10 hours. One case is remarkable, as the vision rose in one day during the treatment, while it diminished in the other. Decidedly benefited were 2 cases; vision remained stationary in 4 cases.

Digitized by Google

The irritation of the eye disappeared some time after treatment, with the exception of one case where the tumour grew, and one case where the process came to a standstill only after perforation. It is said that this treatment is without success with affections of the ciliary body; one case showed cyclitic precipitations, and the treatment proved beneficial without doubt, but these precipitations also can come on when the ciliary body suffers only from a reactive inflammation. It seems therefore that the air therapy had a beneficial effect not so much by ameliorating the vision as by bringing to a standstill a progressive process. The large changes in the diseased picture made it impossible to get a decided opinion.

With 8 patients tuberculin was used always without the least harm to the general constitution; if coughing was present it rather diminished. The reaction of the temperature changed very much, which Verwey cannot explain; it is not to be found in the specimen used. Four patients had reaction, in the eye; the 4 others had no reaction, although 1 showed bacilli; all had more or less swelling of the arms at the seat of the injection. Vision improved in 6 cases; 1 showed amelioration. Only one case was very obstinate.

For deciding the value of air insufflations it is necessary to produce experimentally tuberculosis of the anterior part of the eye of animals, which is very difficult, but which Verwey succeeded to produce in rabbits. He elucidates clearly the different points which we have to look at in these experiments. The serious ocular tuberculosis killed the animals pretty quickly; the more benign forms showed, even when left alone, a decided tendency for healing. Some animals lived for months and months with completely destroyed eyes. No great danger for miliary tuberculosis or propagation to the meninges does seem to exist. On post-mortem the lung alone was found to be infected. The experimentally ectogenous tuberculosis looks in many respects similar to the human tuberculosis. In a fourth series Verwey produced really mitigated iris tuberculosis, the first symptom appearing after 22 days; some animals lived for more than a year; air insufflation and paracentesis had little effect, but it would be premature to draw conclusions from these few experiments.

Terson and G. Terson, in an interesting paper on "Subconjunctival Injections of Air in Ocular Therapeutics" (*Annales d'Oculistique*, February 1907), give the result of their experiments with subconjunctival injections of sterilised air in the various affections of diseases involving the anterior segment of the eye. The method of treatment adopted was that introduced by Koster in 1901, by injecting air into the anterior chamber and under the conjunctiva in tuberculous affections of the iris and conjunctiva. Chesman also made subconjunctival

Digitized by Google

injections of air in the treatment of a form of sclerotising keratitis, which was probably of tuberculous origin.

Impressed with the happy results of insufflation of air in sciatica and various forms of neuralgias by Cordier and others, the authors resolved to use subconjunctival injections of air in cases of corneal affections accompanied by photophobia and pain. They report cases of successful treatment by this method of marginal ulcers, traumatic and non-traumatic, and with and without hypopyon, of sclerotising keratitis complicated with episcleritis and iritis, and one case of infection of the wound after cataract extraction.

One cubic centimeter of air, sterilised by drawing it through the hollow needle which had been heated to redness in an alcohol flame, was injected beneath the conjunctiva with a syringe. The interval between the injections varied from 3 to 5 or 6 days. The complete absorption of the air requires from 3 to 8 days.

As to the way in which this injection of air influences the various lesions of the anterior segment of the eye, several hypotheses may be suggested. It may be simply antiseptic, as in the case of tuberculous peritinitis. It may act by irritation, exciting regeneration of tissue by a flow of fluids in the lymphatics, like injections of solutions of perchloride of mercury. In most of the lesions of the anterior segment of the eye, where numerous filaments of the ciliary nerves are involved, photophobia and pain are prominent symptoms, and are prominently relieved by injections of air which may act by distension of the tissues and subsequent stretching of the fine nervous ramifications.

The authors conclude that subconjunctival injections of air, almost painless and entirely harmless, have an elective action upon the photophobia and the affections of the anterior segment of the eye; that they hasten the evolution of ulcers of the cornea, particularly of marginal ulcers; that they are of unquestionable efficacy in phlyctenular keratitis and in the sclerotising keratitis of young subjects, and are equal in effect to subconjunctival injections of sublimate in the sclero-episcleritis of older subjects, and that they have several times, in their hands, caused the disappearance of hypopyon of an iritis either with or without a wound of the cornea.

Digitized by Google

New Books and New Editions.

A System of Medicine by Many Writers. Edited by THOMAS CLIFFORD ALLBUTT, M.D., LL.D. (Edin.), and HUMPHRY DAVY ROLLESTON, M.D., F.R.C.P. Vol. III. 8vo. Pp. 1040. Price 25s. Second Edition. London: Macmillan & Co., Ltd. 1907.

THE third volume of the System of Medicine deals with general diseases of obscure origin: diseases of the alimentary canal and peritoneum. The volume has undergone very considerable re-arrangement, and claims, with justice, to be more re-written than revised. The volume opens with an article on Rheumatoid Arthritis and Osteo-Arthritis by Dr. A. E. Garrod, which is new in arrangement and in substance. In it a clear distinction is drawn between osteo-arthritis and rheumatoid arthritis which are justly described as two maladies which present distinct clinical features. Rickets, by W. B. Cheadle and F. J. Poynton is well written and well illustrated. Faulty feeding and faulty nutrition—the chief and constant defects an insufficient supply of animal fat and, in certain cases, of earthy phosphates—are the main features of the pathology, and the disease is held to be as certainly curable as scorbutus by the addition of suitable elements to the food.

Gout, by the late Sir William Roberts, is revised by J. Rose Bradford. It gives a full account of the late author's well-known views on the chemistry of gout, first enunciated in the Croonian Lectures in 1892, and carries the literature on to the later work on purins, based on the experiments of Burian and Schur. The general pathology of the disease is held to be dependent on three factors—excessive ingestion, diminished destruction, and diminished excretion of purins. The alkaline and lithia treatments are justly regarded as based on insufficient evidence.

Diabetes Mellitus, by Professor Saundly, is a painstaking account of a most interesting disease-complex, with a full and careful record of a most extensive literature. Seasickness is held by Stocker to be a reflex act due to involuntary closure of the glottis, which can be overcome by habit, by strong determination, or by drugs. This may be so, but the arguments advanced in support of the view do not serve ordinarily.

The second part of the volume is devoted to diseases of the alimentary canal and peritoneum. It opens with two introductory articles—the first an excellent account of the Physiology and Pathology of Secretions by Professor J. Rose Bradford, and the second, somewhat disappointing, on the General Physiology and Pathology of Digestion

Digitized by Google

by the late Dr. C. H. Ralfe and Dr. W. Soltau Fenwick, revised by the latter. The article on Diseases of the Mouth has been re-written by Mr. Walter G. Spencer, and is very complete and gives a very full list of references. Dyspepsia is the title of an article ineptly introduced by defining the subject as a "general name generally used as synonymus with indigestion." The article is true to its definition—it is dyspepsia, clinical symptoms and subjective phenomena—but contains useful hints for the treatment of imperfectly diagnosed morbid conditions.

The sections on the Neuroses of the Stomach and on Gastric Dilatation are from the graceful pen of Professor Clifford Allbutt. The monograph on Ulcer of the Stomach is a fitting memorial to the memory of its distinguished author, the late Professor Dreshfeld. It is a piece of work which should long take first rank in the literature of the subject.

New articles are incorporated on Congenital Hypertrophy of the Pylorus, by Professor Still; on the Bacteriology of Diarrhœa, by Dr. Slater, and on Subphrenic and Other Forms of Peritoneal Abscess, by Dr. Acland.

Space forbids us to mention much in the volume that is new and important. It contains much good work, and yet we must admit to a feeling of disappointment. The section on Diseases of the Alimentary System does not, we think, taken as a whole, come up to the standard of some of the individual articles, nor to the standard of what the leading system of medicine in Britain should represent. Articles on symptoms such as dyspepsia and signs such as gastric dilatation, however gracefully written, are, we think, a mistake in a present-day volume which should be the standard work for British physicians. To us it seems that the whole section wants re-arranging before it will be in line with the modern conception of diseases of the alimentary system.

Diseases of the Intestines and Peritoneum. By Prof. S. Hermann Nothnagel. Edited, with additions, by H. D. Rolleston, M.A., M.D., F.R.C.P., Physician to St. George's Hospital, London. Pp. 1059. Philadelphia and London: W. B. Saunders Company. 1907.

This volume of the Nothnagel series on the diseases of the intestines and peritoneum maintains the high standard of excellence of those already published.

It contains probably as complete and up-to-date an account of intestinal conditions as exists in any language at the present day.

Digitized by Google

With the editor's interpolations, indicating at times other views somewhat at variance with those of the author, or referring to additional work done since the original publication, we have a volume too diffuse probably to be read from cover to cover, but an invaluable reference for clinicians and for those who are working at these special subjects.

The chapter on appendicitis is probably the most interesting. We have now reached a stage when definite figures have been obtained and definite opinions have been formed on the many aspects of this debated condition. The editor has collected, for the first time, from all available sources physicians' and surgeons' opinions, and, by a careful analysis of them, attempts to clear up the many uncertain points in this difficult subject.

The main interest naturally arises over the question of treatment, and the author goes very freely into the debatable question of the necessity of operation in absolutely every case.

From his own experience, and that of the many authorities whose results he has had access to, he forcibly combats the view that immediate operation is requisite and best for the individual within 12 or 24 hours after the onset of an attack.

The surgical enthusiast has two arguments that he thinks unanswerable:—

1. It is impossible to say that in any given case perforation into the general peritoneal cavity may not occur; therefore there is danger even in a mild case.

2. No case of appendicitis is ever completely cured, and patients are therefore in constant danger of recurrence, with the same dangers as in the first attack.

The author points out, however, in answer, that while many surgeons never have a death in early operation, the operations are performed by men of great experience, with all the appliances of a well-equipped hospital at their disposal, and that the same results could not be expected if less experienced individuals felt bound, by the strong expressions of opinion by surgeons, to operate in every case that occurred in their practice.

Again, although the mortality in early operation is small, deaths do occur even with the more experienced, and this mortality is relatively large in a disease with so small an absolute mortality. In addition disagreeable sequelæ must be taken into account.

He sums up his opinions in the words of Treves: "Our knowledge of the pathology of the disease and its general mortality will not sanction the practice of opening the abdomen in every case of appendicitis as soon as the diagnosis is established."

Digitized by Google

Other conditions of the intestine and peritoneum are dealt with in the same complete and valuable way as is appendicitis, and the volume will remain for a time the best reference on the subjects of which it treats.

De L'Apepsie. Par le DR. HENRI FRANCAIS. Pp. 206. Paris: G. Steinheil. 1906.

UNDER this term, our author describes a clinical condition which is not in itself a pathological entity, but which may appear in the course of various morbid states. The term is as old as Galen, and is used by Molière in his play "Le Malade Imaginaire," but its present precise meaning of *a condition characterised by the apparently complete suppression of the chemical functions of the stomach* dates back only to Hayem's work in 1890. The history of the modern investigations of this subject, only possible when the full value of test-meals was established, is given in succinct fashion, due credit being assigned to Fenwick who worked out atrophy of the gastric mucous membrane in a case of anæmia in 1870. Max Einhorn's *achylia gastrica* is the term most commonly used with us, though other authors use *anadenia gastrica* or anacid gastritis as synonymous. The condition may, according to Français, be (1) latent, (2) associated with gastric pain, or (3) diarrhœa. In the first form, the stomach soon empties itself, perhaps in half an hour, and digestion is completely performed in the intestine. Again, apepsia may be the manifestation of a primary chronic gastritis, or it may be the accompaniment of cancer, pernicious anæmia, general infective states (typhoid, tuberculosis, anæmia, diabetes, &c.), or of certain nervous affections. Dr. Français gives the experiments he himself performed along with M. Lion, in which by injecting a gastro-cytolysine he brought about an analogous condition. Diagnosis of the primary gastritis apeptica from cancer is often far from easy in the early stage. The various points are fully weighed in this monograph. In regard to treatment, diet counts highest as one would expect, and in many cases kefir is used with the greatest advantage. One cannot do more here than refer anyone interested in the subject to the very complete account of the whole disorder—how to examine the case, and how to treat it—all described in simple lucid French. Thirty-five illustrative cases, mostly collected from various sources, are appended.

Digitized by Google

Movable Kidney and other Displacements and Malformations. By DAVID NEWMAN, M.D. Pp. 233. London: Longmans, Green & Co. 1907. Price 5s.

THE author states in the preface to this work that it is a result of practical experience rather than the product of any special research into the literature of the subject, and this is borne out by the reports of cases which have been under his care, and which are utilised to illustrate many of the opinions he expresses, and conclusions at which he arrives. The pathological anatomy, etiology and symptoms of movable kidney are discussed in some detail, and Dr. Newman, although he does not bring forward any new information to elucidate the etiology of this comparatively common condition, gives a clear account of the ordinarily accepted views upon that part of his subject. In those cases which require operative treatment the author emphasises the importance of excising the fatty capsule, and advocates packing with gauze for some days so that union by granulation is secured. He admits that the method used by some other surgeons of suturing the capsule of the kidney to the parietes, with a view to primary union, is usually successful, but he believes healing by granulation to be more certain. We observe he does not allude to the method suggested by Harris of making a shelf to support the kidney. The much-debated question of the occurrence of *floating* kidney, in the sense of a mesonephron being present, is discussed in Chapter VI., and, among others, a case is reported in which at the operation the author found the kidney had a definite mesonephron. The remaining pages are chiefly devoted to the consideration of *misplaced* and *malformed* kidneys, conditions of importance when we recollect how such abnormalities may complicate operative procedures in cases in which renal disease may indicate the need for nephrectomy.

The excellent work by Dr. Newman in renal surgery is well known, and in this book he has brought his experience of a special part of renal surgery before the profession in an easily read and interesting way, at a time when the subject is attracting much attention. We can recommend this work as a reliable guide to those who have not had much experience in the diagnosis and treatment of such conditions.

Transactions of the College of Physicians of Philadelphia. Third Series, Volume XXVIII. Pp. 386. Philadelphia: Printed for the College. 1906.

THIS volume of transactions contains the papers read before the College from January 1906 to December 1906.

Digitized by Google

The volume does great credit to the College of Philadelphia and contains many papers of much interest, and several of them are well illustrated. The papers embrace a wide variety of subjects—in Medicine, Surgery, Gynæcology, and Pathology. The volume contains an interesting account of the work carried on at a "State Institution for the Care of Epileptics." There is also a paper on the "Use of the Biograph in Medicine," with illustrations, by Dr. Walter G. Chase, who read a paper on this subject before the Edinburgh Medico-Chirurgical Society in May 1906. There is also a paper on "Hospital Management," which will be read with interest and profit. And one, on The making of a Museum of Applied Anatomy.

Of the other papers in the volume we may call special attention to a most interesting Case of Congenital Sacrococcygeal Tumor with an Opening entirely through the Sacrum, and a Sinus passing through and communicating with the Rectum, the Sinus resembling a Bronchus, by W. W. Keen, LL.D., &c.; and a Pathological Report of the Tumor and Sinus by Dr. A. G. Ellis.

We would draw the attention of the College to the fact that among the list of Foreign Associate-Fellows the name of Professor Thomas R. Fraser should be SIR Thomas R. Fraser—a title he has had for several years.

Practical Diagnosis: The Use of Symptoms and Physical Signs in the Diagnosis of Disease. By HOBART AMORY HARE, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia. Sixth Edition, Revised and Enlarged. Pp. 562. London: Henry Kempton; and Glasgow: Alex. Stenhouse. 1907. Price 21s. nett.

THAT this book has now reached a sixth edition is ample proof of its usefulness. It deals with the diagnosis of disease chiefly from a clinical standpoint. Each prominent symptom of disease is dealt with separately, the possibilities in each case enumerated, and the points in differential diagnosis thoroughly discussed. All the known methods of examining the patient are given clearly and in full, and the illustrations are well chosen and helpful in demonstrating the correct methods of investigation. The examinations of urine, blood, sputum, &c., are only dealt with in so far as necessary, so as to arrive at a correct diagnosis. The book does not pretend to describe fully all the details of side-room work. It can be thoroughly recommended for the student, as it gives him a thoroughly practical guide to his subject. For the practitioner it will also prove invaluable in directing the lines to be followed to reach a correct diagnosis, especially where the symptoms

Digitized by Google

suggest the presence of one of the less common diseases. The illustrations, some of which are coloured, are excellent throughout.

Physical Diagnosis, with Case Examples of the Inductive Method. By HOWARD S. ANDERS, A.M., M.D. 88 Illustrations and 32 Plates. London: Sidney Appleton. 1907.

NOWADAYS one cannot complain of a lack of volumes on physical diagnosis, and each new one requires some special merit if it is to command success. There is not much scope for originality in writing on a subject already more or less defined and exact.

Dr. Anders however has proceeded on fresh lines, and has written his volume with a special purpose. He is of the opinion that in recent years laboratory training in the methods of diagnosis have superseded, to a great extent, teaching by careful clinical observation. Such training is undoubtedly of very great value, but more important for the student are bedside data if assimilated in the proper way.

For this purpose he would have them fashion themselves on Conan Doyle's famous detective, and in their bedside investigations acquire the "synthetic induction" habit. This method he follows out in the chapters on the Heart and Lungs, which occupy about two-thirds of the whole volume. The physical signs of the chest are very fully and very carefully discussed, and both the method and the material can be recommended to every student of medicine.

The abdomen is more lightly touched upon, and somewhat incompletely.

A chapter on Rontgenoscopy—what may be learned from it, and general directions for carrying it out—completes the volume. There are numerous excellent illustrations.

Physical Methods in the Treatment of Heart Disease. By ARTHUR G. DEMPSTER-BENNETT. Pp. 111. Bristol: John Wright & Co. 1907. 3s. 6d. net.

THE author discusses the various physical methods used in the treatment of heart cases. While the artificial Nauheim bath is most favoured, rest, massage and exercises, passive-Schotts, and active-Oertels are also described. The data are too few to enable an enquirer to draw reliable conclusions from them, and the book is rather an assertion of the opinions of the author than a scientific review or exposition of the subject. Experimental details are conspicuously absent. The book is tastefully got up, and well printed.

Digitized by Google

Etude Histo-Chimique et Cytologique des Crachats. By S. ISRAELS DE JONG. Pp. 151. Paris: G. Steinheil. 1907.

IN this work the author places on record certain histo-chemical and cytological observations on the sputum. The technique which he follows is fully described. Films of the expectoration which have been spread by means of a platinum loop are fixed with chromic acid and then stained with Unna's polychrome blue, methylene blue and eosine, hæmatein and eosine, &c. The tinctorial reactions of mucus are given in considerable detail, and it is pointed out that mucus appears in two forms—hyaline and reticular. The mucous reticulum is, as the author indicates, frequently mistaken for fibrin, which is almost entirely absent from the expectoration, however, even in that of pneumonia. The significance of sero-albuminous fluid, and of various cells—epithelial, leucocytic, &c.—is then discussed, Teichmüller's observations on eosinophile bronchitis being sharply criticised. At the close of the work, which contains four coloured plates, the author summarises the main characters of the sputum associated with the chief pulmonary diseases.

Post-Graduate Clinical Studies for the General Practitioner. By HAROLD SCOTT, M.B., &c. Pp. x. + 166 and 35 Diagrams. Demy 8vo. London: H. K. Lewis. 1907. Price 8s.

IN these Clinical Studies the author discusses, in masterly and lucid style, some cases presenting special difficulty in diagnosis, and also points of importance in differential diagnosis of some affections which are easily overlooked or mistaken. The most important of these studies is that on syphilis, the value of which is enhanced by a large number of diagrammatic tables showing, in graphic form, the relative frequency of venereal diseases under different conditions. It would have added to the value of the paper had the author discussed the question of virulence of syphilis in relation to the race of the carrier of infection.

New Sydenham Society's Atlas. (Fasc. xxvi.)

THIS, which we suppose is one of the last productions of the Society, contains illustrations of eczema, lichen, gout tophi, &c.

Each has its good points, illustrating some interesting feature of the diseases portrayed, but they also unintentionally demonstrate the fact that the newer processes of reproduction of skin diseases are those to which we must look in the future for the pictorial recording of appearances.

Digitized by Google

Essentials of Physiology for Veterinary Students. By D. NOEL PATON, M.D., B.Sc., F.R.C.P.E., Professor of Physiology, University of Glasgow. Second Edition, Revised and Enlarged. Pp. 464. Edinburgh and London: William Green & Sons. 1908. 12s. nett.

THIS work differs so little from Professor Noël Paton's "Essentials of Human Physiology," lately reviewed in these pages, that only a few words are needed to introduce his "Essentials of Physiology for Veterinary Students" to those for whom it has been written.

The author evidently thinks, and we agree with him, that the physiology to be learned by all sorts of students—veterinary or otherwise—is one and the same. This work is not a handbook of comparative physiology, but a work dealing with the fundamental phenomena of the functional activity of the mammal.

The veterinary character of the book is especially distinct in the chapter on Digestion, which contains accounts of the digestive processes in the horse, dog and pig.

All diagrams and figures, except that of the kidney on page 423, are very good, in that they vividly and succinctly portray what they are intended to teach: some of them are to be found in no other work.

The diagram on page 67 would have had its value enhanced by the "local habitation" of the *lymph* having been *marked;* it would have impressed on the visual memory of the junior student that all cells of all tissues live in and by lymph.

What one might call the relationship of histology to function is well done, particularly in the region of the histology of secretion.

Referred sensation and pain might with advantage have been more fully treated, especially in view of its connection with afferent splanchnic fibres.

Professor Paton's not treating of theoretical matters has led him into one or two minor inconsistencies.

In dealing with the fundamental endowments of protoplasm he nowhere explains that irritability (affectability) is a primary property of living matter, but on page 72 we are told that before death of muscle its "irritability" diminishes.

Again, why should it be quite correct to speak of the *spontaneity* of a muscle (page 71), when it is not permitted to allude to *automaticity* of a nerve-centre? But these are things that will not trouble the beginner, who will find in this text-book an interesting and fresh presentation of the fundamental facts of physiology.

Digitized by Google

Marriage and Disease. Abridged and Translated from the German by J. DULBERG, M.D. Pp. 452. London: Rebman, Ltd. 1907. Price 8s. nett.

THE original work, which was published some time ago as a text-book for the medical profession, consists of 26 monographs by authorities on the respective subjects. One of the authors—Professor H. Senator—wrote also an introduction. It is stated in the preface to the present abridged edition that it is intended for the general public, in order that those who contemplate or have embarked on matrimony may know somewhat of the medical and hygienic aspect of marriage. This purpose would be much better fulfilled by a smaller work—one less loaded with scientific detail.

As a guide for the general public many of the articles are well adapted to fulfil their object, some of them will not be understood by the lay reader, and some of them deal with matters about which the less the layman knows the better (perverse sexual sensations). There are clearly exhibited the disadvantages to the progeny of early and late marriages, of rapidly succeeding pregnancies, the results of syphilis, tubercle, mental diseases, metabolic disorders, the disadvantage of alcohol, the evils of uncured gonorrhœa, and the dangers of consanguinity. The tables in this section are convincing, but the argument is somewhat laboured with the view of showing the possible evils of slight predispositions. The author does not condescend to the simple statement, that in consanguineous marriages if there is a family taint it will probably be doubled in the progeny.

The book is more suited for medical men, but in the more medical articles there are omissions and some statements the correctness of which is more than doubtful. In the chapter on menstruation, pregnancy, &c., the author questions whether abstention from intercourse during menstruation is a hygienic necessity, and inclines to the view that it is a very ancient mistaken prejudice. He adduces in support of his view the habit of the lower animals when the female is in heat. His argument is invalid, because the menstrual period of the human female corresponds to the pro-œustrum of the lower animals, and it is the post-menstrual epoch which corresponds to the œstrus—the time at which congress of the sexes takes place among domesticated animals, deer, &c.

There is apparently a considerable difference in the statistics of disease in this country compared with Germany. Essential primary anæmia without assignable cause is said to be common after marriage in Germany; it is not so in this country. Here it is not the experience that the greatest number of lupus patients succumb to tuberculosis. Eclampsia is not more frequent in women with contracted pelvis.

Digitized by Google

The volume contains much interesting material in relation to heredity, consanguinity, and the influence of climate, race and nationality. There is a marked difference in the quality of the articles. Some are of high value from a scientific standpoint, and some from the way in which they enforce the imperial and economic aspects of the marriage relation.

The Tragedy of the Highland Doctor. The Eddy. By RICCARDO STEPHENS, Author of "The Cruciform Mark," &c. Edinburgh and London: William Blackwood & Sons. 1907.

UNDER the title of "The Eddy," more picturesque but less descriptive than the heading we have set over it, Dr. Stephens has issued a story of great general interest, but which should attract especially the attention of the medical profession, and of all who are concerned with the problem of the medical service of the Scottish Highlands. In his former stories Dr. Stephens was remarkably successful in placing his reader in the mental atmosphere of his main character, and in this his skill is on the present occasion equally well marked. Thus it is through Dr. Amory's eyes that one sees the inhabitants of the town and glen; and if the pictures, with all their humorous features, are not entirely prepossessing, they constitute the environment which reacted on the doctor, and made a tragedy of his career. The life of the Highlands is here no more favourably portrayed than in "The House with Green Shutters," but the description is traced in the mind of an actual participator, and not in the cold-blooded report of an outside observer.

Amory is a type not uncommon in the medical profession. Artistic (he reads "Don Quixote" in the original), he has ambitions of an uncommercial nature which centre in a work on heredity, and in its interests he tries to avoid a busy practice by settling in a small Highland town. The characters he meets with—from Lady le Quesne on the one hand, and the Provost on the other, downwards—are well, if not quite lovingly, depicted; and each, even including those in favourable contrast, contributes to deepen the impression of the dissonance of the doctor and his world. The anecdotal incidents of the doctor's experience, including his relations to the Parish Council, are also convincing in their actuality, though a wholesale motor tragedy seems a little too *apropos*. The tale as a whole, as well as its incidents, is interesting, and it unites and compacts into one forcible impression many things relating to the lot of Highland doctors, of which individual hints have previously reached their colleagues in the South.

Digitized by Google

THE SCOTTISH MEDICAL AND SURGICAL JOURNAL.

Editorial Notes and News.

Epidemic Disease in Edinburgh.

SINCE this year began Edinburgh has been visited by no less than three epidemics.

In the first place, influenza has been much more prevalent than for many years past, and during January many public institutions had so many cases amongst their staff that there was great difficulty in carrying on the usual work. In the Royal Infirmary so many nurses were attacked that the sickroom was more than full, and several of the resident physicians and surgeons were also laid up from the same cause. The Royal Asylum and the Post Office also suffered severely. The disease was also prevalent amongst children. One headmaster who was questioned said that he had never had such bad attendances as during January. In another large school 15 or 16 children were sometimes absent at the same time from a single class. On the whole, the cases were not of a severe type, but convalescence was apt to be slow. Gastric symptoms were a marked feature of many cases. So, also, was severe headache. During January and February 41 deaths were registered in Edinburgh as due to influenza.

A second epidemic was an outbreak of foot-and-mouth disease in a herd of cows belonging to a dairy in the west of Edinburgh. Drastic measures for the suppression of the disease were adopted by the Board of Agriculture. The entire herd of affected cattle was slaughtered, thorough inspection of the byres in the district was carried out, and the movements of cattle within a scheduled area were restricted. In spite of all precautions, however, a second outbreak occurred in February in a cow-house belonging to the same dairyman in whose main dairy the first outbreak occurred. In the herd now affected there were 21 cows, all of which were slaughtered. Within a few days several other cases occurred in the same neighbourhood, and 31 more cows from these different cow-houses were slaughtered. The original outbreak is attributed to infected hay from abroad.

Digitized by Google

The third epidemic—if it can be called an epidemic—was an outbreak of small-pox, from which Edinburgh is usually free. The original cases occurred in Leith, and prompt measures were taken to trace and vaccinate contacts. In spite of this, the disease spread to Edinburgh, and during January and February 14 cases were notified.

Medical Inspection of School Children at Dunfermline.

THE second annual report on the medical inspection of school children in Dunfermline has just been issued by Dr. Bridge, who has succeeded Dr. Ash as medical officer to the Carnegie Dunfermline Trust. The examination is carried out in the various public elementary schools. Written permission is obtained from the parents, and Dr. Bridge notes that refusals on the part of parents to submit their children to examination have gradually decreased, and he hopes they will soon be a thing of the past. The children themselves evidently do a good deal of useful missionary work, for we are told that those whose parents refuse the request show keen disappointment, as they are not in a position to compare with their fellows their height and weight, in which all children take a lively interest.

Although no medical treatment is undertaken by the medical officers of the trust, the report shows in several places how medical inspection may benefit the children by making known to their parents the existence of conditions requiring treatment which they had failed to notice, or whose significance they had failed to appreciate. Thus no less than 12 boys were found suffering from hernia; one child was suffering from iritis; and several cases of contagious conjunctivitis were discovered attending school.

The report agrees with similar reports from other quarters in showing the high proportion of such affections as adenoids, enlarged glands, deafness and imperfect vision amongst the school population. It is satisfactory to observe that no cases of phthisis were discovered.

The very high percentage of heart disease observed deserves some notice. Valvular disease was present in 36 boys, or 3·3 per cent. of those examined, and in 9 girls, or 2·1 per cent. Functional diseases were noted in 23 boys, or 2·1 per cent., and in 6 girls, or 1·4 per cent. Of the 36 cases of organic disease in boys, 31 were cases of mitral regurgitation; of the 9 cases in girls, 8 were mitral regurgitation. The relatively large proportion of boys suffering from organic disease as compared to girls is of interest. The chief causes of organic disease in children—namely, chorea and rheumatism—are more frequent in girls than in boys, and both Sturges and Holt report a preponderance of chronic endocarditis in girls. It is possible that some cases of valvular

Digitized by Google

disease in girls were not detected, for Dr. Bridge states that the girls of the senior department were not undressed except in those cases where a special request was made to the parents. But another possibility is that in some cases the mitral systolic murmur discovered indicated slight dilatation and consequent regurgitation without endocarditis. It will be interesting to learn the subsequent history of these cases. Temporary dilatation of the heart in growing children is not uncommon, and it is obviously of importance that such cases should be discovered in order that precautions may be taken to avoid over-strain. On this subject Dr. Bridge remarks that unfortunately "exertion can only be limited in regard to physical training, the boys when out of school often straining the heart to a great extent during their games in the playground." This is of course true, but still some limitation may be placed upon the playing of games involving severe exertion, such as football; while a very common cause of cardiac strain is within the control of the parents. This is the hiring out of growing lads as message-boys to shopkeepers, who are often very inconsiderate as to the amount of the loads the boys are expected to carry.

The Care of the Feeble-Minded.

"THE Care and After-Care of the Feeble-Minded" was the subject of a lecture delivered by Miss Mary Dendy at the City Chambers on 28th February. On the following day a conference on the same subject was held under the auspices of the Edinburgh Charity Organisation Society. Miss Dendy has done most valuable pioneer work for the feeble-minded children of Manchester, and her account of the colony at Sandlebridge was full of hints which must prove of great service when similar work is undertaken in Edinburgh.

Manchester has now four special schools for the feeble-minded—that is to say, for children who are neither idiots on the one hand, nor simply backward on the other, who are incapable of instruction in an ordinary school, but capable of improvement in a special school. The institution at Sandlebridge, in Cheshire, is residential, and now accommodates 138 children, varying in age from 6 to 19. It was begun on a very small scale, and Miss Dendy was emphatic in recommending the advantages of beginning in this way, firstly, because there are practically no experienced teachers available, and, therefore, each school has to train its own teachers; and, secondly, because, if a few children are taken and trained into decent habits, these would greatly assist the training of subsequent admissions. The feeble-minded child is very imitative in his habits, and, if he is brought to a home where all things are done decently and in order, his own manners and customs improve remarkably quickly. The young people at Sandlebridge are polite,

Digitized by Google

clean, tidy, and extremely happy in their lives. They do a large amount of useful work, and last year a profit of £448 was made on the working of the farm and gardens, which extend to 100 acres of land. One source of profit is the potting of plants, which are sold to the Manchester schools, and it is expected that next year Sandlebridge will be able to supply the entire number of plants, amounting to a good many thousands, which are required by the schools.

Although the children lead happy and useful lives at Sandlebridge, they cannot be rendered capable for the life of a normal man or woman. Miss Dendy stated that there was abundance of experience to show that the good habits learned at Sandlebridge were lost with remarkable rapidity in other surroundings, and urged very strongly that the only satisfactory means of dealing with children of this class would be to keep them for life.

A considerable amount of inquiry work has been carried out in Edinburgh by the Charity Organisation Society and the Invalid Children's Aid Society, and it has been found that we have amongst us a large number of feeble-minded children and young people for whom no proper provision has been made.

The Vacant Chairs.

THE three chairs still remain vacant, and we have nothing fresh to report regarding any of them except that Dr. Gibson, who was generally regarded as likely to be appointed to Glasgow, has withdrawn his candidature.

Mrs. Pettigrew, widow of the late Professor Pettigrew, has given to the University of St. Andrews the sum of £6000 to be used to found a museum in memory of her late husband.

The British Medical Association.

THE result of the referendum on the proposals of the representative meeting, which has been in progress for the last six months, was announced on 21st March. It cannot be satisfactory to anyone. In the first place, of the 20,673 members who comprise the Association less than 2000 took the trouble to vote. The majorities in favour of the different proposals varied from 615 to 409, the figures being 1219 for to 604 against, and 1120 for to 711 against. The result is unsatisfactory to the Council party, for small though the vote is it is a vote of no confidence in the old management, nor can it be satisfactory to the Horsley party to find so little of the enthusiasm which they hoped for that only 1200 members responded to their call. Perhaps the most striking incident is the colonial vote. The Council party were solemnly warned that if the new constitution were not at once adopted, the colonies would be lost—to the Association. It was now or never that

Digitized by Google

the colonial offer was to be adopted. And what have the colonies done? Out of a total membership of 3698, 147 attended the meetings summoned to vote on the new proposals, and in every single instance the combined vote was adverse to them, the majorities against the proposals of the representative meeting ranging from 10 to 75; the only divisions supporting the new proposals being Victoria and Gibraltar. Scotland, too, supported the Council by 116 to 74 votes out of about 2000 members. In Ireland even less interest was taken. Altogether 57 members attended the meetings, and 21 voted for the new proposals and 26 against them. The brightest gem of humour comes naturally enough from the South-Eastern of Ireland Branch. It was not in Kilkenny (where the voting was 4 to 1 for the new proposals), but in Carlow that the contest between the opposing parties ended in a draw. Two members attended the meeting and one voted each way. But the position has its serious as well as its humorous side, and it behoves those who have the interests of the Association at heart, and some experience in statesmanship, to give careful consideration to the condition into which the affairs of the Association have drifted, and to endeavour to evolve some order out of the chaos.

Medical Education of Women.

We do not propose to enter into the controversy of Medical Education of Women, nor to refer to the question of site facilities. There are undoubtedly certain subjects which can be taught perfectly well to mixed classes, as there are others which can not. But we do think that to suggest that the women students do not get fair play in the Royal Infirmary is going beyond the lengths of fair argument. Practically all the special departments are equally open to men and women, and in the departments of Medicine and Surgery it has always appeared to us that the advantage is on the side of the women. The prevailing cry for age limits and superannuation does not touch them, for the physician and surgeon whose departments they attend are the most recently appointed. They come to their work after a probation long or short, generally the former, and for the first time in full charge of wards and in full control of their own teaching, they throw into it an enthusiasm and zeal which cannot but be beneficial to the students.

A little more moderation in argument and action would do no harm to the women's cause.

Notes from Glasgow.

The report of the Commission appointed to inquire into the Ruchill Hospital dispute, and the note from the Local Government Board in reference thereto, have given rise to much discussion both in the Town Council and in the

Digitized by Google

daily press. Among the members of the medical profession in Glasgow the feeling is strongly held that whatever may be the result as regards other questions involved, equity demands that the assistant medical officers should be reinstated.

The vacant Chair of Medicine continues to cause much speculation, and it can be said with truth that among the profession generally the withdrawal of the candidature of Dr. G. A. Gibson was learnt with much regret. At first the feeling was "Glasgow for a Glasgow graduate," but that has given place to the hope that the appointment will be made on merit alone, and that only the maintenance of the high dignity of the position will be considered.

Representation of Glasgow University in the General Medical Council.—By the expressed wish of the University Court Principal MacAlister has agreed, subject to the consent of the University of Cambridge, which he now represents, to fill the vacancy caused by the death of Sir Thomas M'Call Anderson.

ON THE FROZEN SECTIONS BY BUMM AND BLUMREICH, AND BY ZANGEMEISTER—IS THERE A LOWER UTERINE SEGMENT?[1]

By A. H. F. BARBOUR, M.D., LL.D.

IN a former paper read to this Society, dealing with the Sectional Anatomy of Labour, I discussed the question as to what was the upper limit of the lower uterine segment. In this we have to consider not what is its limit, but whether there is a lower uterine segment at all. That it does not exist is the thesis argued by Bumm and Blumreich in the light of the extremely interesting section published by them rather more than a year ago.

The issue is a serious one. This child of modern obstetric thought, the conception of Birnbaum, brought into the world by Bandl, nurtured by Küstner and Bayer, adopted by Schroeder, educated in France, Italy and Scotland, set up in life by Von Franqué and Leopold, is suddenly "deaded" by Bumm and Blumreich (its existence had been previously threatened by Zweifel), and we are asked to attend the funeral. The death-

[1] Read before the Edinburgh Obstetrical Society on March 11, 1908.

Digitized by Google

certificate is not quite in order, and it is that which we have to scrutinise in this paper.

The crux of Bumm and Blumreich's argument is in the sentence quoted in the billet: "I do not think that two different interpretations should be allowed. The only solution of the difference of opinion is that one of us (either Dr. Barbour or ourselves) is mistaken in his interpretation of the microscopic findings." And, to prove themselves right, they make me wrong in the interpretation of my microscopic findings. In self-defence I have disinterred the microscopic sections of 18 years ago, and have had new photographs taken. "Another Druce case," I hear some Fellow of the Society wittily remark. It is, gentlemen, and the evidence goes to show that, in this case at least, the cervix did not masquerade as lower uterine segment.

While Bumm and Blumreich's paper, "Ein neuer Gefrierschnitt durch die Leiche einer in der Austreibungsperiode verstorbenen Kreissenden, und seine Bedeutung für die Lehre vom unteren Uterinsegment," was read before the Gynæcological Society in Berlin in November 1905, the Atlas itself was not published till March 1907, and only came into my hands last autumn. At the same time I received also Zangemeister's Section of a case of rupture of the uterus. The two sections I therefore consider together. In this paper I propose to give:—

I. A brief historical sketch of the present view regarding the lower uterine segment.

II. A statement of the position taken up by Bumm and Blumreich.

III. A criticism of that position.

IV. A note on Zangemeister's Section.

I.

To save time, let me lay on the table the literature to be published in full in the *Transactions*, and recapitulate briefly the history of the development of the present view with regard to the lower uterine segment. I have given as landmarks a list of names and dates. It begins with a paper by Birnbaum in 1841, his "Habilitationsschrift" or Graduation Thesis, I suppose, which contains numerous references to a lower uterine segment. In describing the condition of the cervix in pregnancy as determined clinically—for his work was entirely clinical—he refers to

Digitized by Google

the lower part of the uterus under that term. Thirty-one years later he returned to the subject in another clinical paper, which I think was called forth by Müller's Graduation Thesis (1868), who also gave a description of the cervix in pregnancy, based on clinical study.

Then came Braune's Classical Section, which threw the apple of discord into the lap of obstetrics. As you know, it was the thickening in the uterine wall seen at the point which Braune labelled "os internum" that started the controversy. Why he called it "os internum" he himself did not know, as Sänger tells us in a paper written 20 years later.

Braune's Section set Bandl thinking. He had already given to the obstetric world his great contribution on "Rupture of the Uterus," and followed it in 1876 by a paper on "The Lower Uterine Segment," in which he promulgated the view that the stretched tissue in Braune's Section was cervix, which had changed its character in pregnancy so as to resemble the body of the uterus, and that the os internum had—if one might use the expression—moved up into the uterine cavity, having lost its identity. Into the discussion, therefore, on this question new terms creep, and we find "Bandl's ring" and "Müller's ring" spoken of. By Müller's ring was meant the constriction where the tubular canal of the cervix began; by Bandl's, a constriction higher up. The advantages of the phrases were that they did not commit anyone as to where the ubiquitous os internum was.

A second frozen section (by Chiara), in which the mother had died while the fœtus was undergoing spontaneous version, while showing the thinning that occurs in obstructed labour, did not elucidate the question of the lower segment, as no microscopic examination was made.

Then appeared two important monographs by Küstner and Bayer, each based on the study of many specimens. They approach the subject from two different standpoints—Küstner from the mucosa, Bayer from the muscular wall. Let me compare and contrast these conclusions as far as I understand them; and an illustration will help us. Let my hand represent the uterus, the palm being the body and the fingers the cervix, and this ballot-ball the ovum. The received view was that the area of decidual reaction was definite, the stimulus of the ovum radiating down to the base of the fingers and stopping there.

Digitized by Google

Küstner contested this, and showed that in some cases decidual reaction extends to the fingers—beyond Müller's ring; and that, conversely, cervical epithelium may be found extending above Müller's ring. Bayer, on the other hand, maintained that the area of decidual reaction was definite, but that after the fourth month, as the result of the expanding ovum, more and more of the cervix uteri was taken up mechanically and converted into the uterine cavity.

Now, gentlemen, we must extricate facts from theories. There are a certain number of uteri—I do not know how many, say ten per cent.—in which a doubtful area is found, a condition which is difficult to explain, and the question arises: Is this *transitional* or is it *exceptional?* Are these specimens evidence of a physiological process, or are they aberrant forms? I think the weight of the evidence is in favour of the latter view, which is the position taken up by the chief recent authorities in Germany.

Bumm and Blumreich maintain that *cervix remains cervix to the end of pregnancy.*

Between the dates of these two papers I laid my first frozen section before this Society, which showed a folded-up part of the genital tract in a patient immediately after delivery, which I then called cervix, but which I now call cervix plus lower uterine segment. I have not mentioned it among the landmarks, because it really throws no light upon the question at issue. The first frozen section in which we find solid ground beneath our feet, as the naked-eye appearances were confirmed by microscopic examination, is that of Chiari. The patient died with membranes unruptured almost at the vulva, as they were in Braune's Section; the cervical canal measured 0·8 of an inch, and decidua began where cervical mucosa ended. This valuable section is rejected by Bumm and Blumreich on the ground that it shows no retraction-ring. Whether that is a sufficient reason I leave you to decide.

Then came Waldeyer's Section, which throws an interesting side-light on this question, for in it we have, for the first time, the relation of the cervix and membranes, as found in a frozen section, carefully worked up by microscopic examination. The canal here measures 1·4 ins. in length.

It was followed by sections by Schroeder and Stratz from the first stage of labour and immediately after delivery; and the clear exposition of the nature and origin of this segment from Schroeder's

Digitized by Google

lucid pen led to the general acceptance of his views. He introduced the term "contraction ring," which, on a suggestion of mine, has been recently modified into "*re*traction ring."

In the same year I laid before this Society a frozen section from a patient who died during the first stage of labour, which is of interest as showing the side relations of the lower segment. As far as I know, it was the first coronal section of the uterus in labour that had been made.

I pass over sections by Saexinger and Winter to one made in 1889, and subsequently published by Dr. Webster and myself in the Laboratory Reports of the Royal College of Physicians. And here a word of personal explanation is necessary as to the publication of the results. The sections were published in a reduced form in the Laboratory Reports, the microscopic results not appearing in these Reports, as, though the microscopic sections had been made, they had not been worked up. It was not till some years later that the original drawings were published in the third edition of my "Atlas of the Anatomy of Labour," and the micro-photographs were kept back till the same date. I mention this because Doederlein expresses regret that no microscopic examination was made, and Blumreich speaks of it as not having been made till many years later. Reference to the anatomical points brought out in my own sections I shall defer to the third part of my paper.

The last name I have given in the list of landmarks is Von Franqué's exhaustive monograph on the cervix and lower uterine segment. I have not mentioned Leopold, because, while he gives a plate to the cervix in pregnancy in his Atlas *Uterus und Kind*, he accepts unreservedly Von Franqué's position, which is that the *lower segment belongs to the body of the uterus.* Nor have I given a place to Aschoff's ingenious hypothesis that the lower segment is developed from the isthmus, and that it is uterine as to its mucosa, but cervical as to its muscular wall. It is an attempt to bring the various conflicting views into line, which brings confusion rather than clearness into the discussion of an intricate subject.

II.

We pass now to a statement of the position taken up by Bumm and Blumreich, which amounts to this—that there is *no* lower uterine segment; that what has been described as such is simply

Digitized by Google

stretched cervix. For their position is different from that taken up by Bandl, Bayer or Küstner. Bumm says: "Pregnant uteri can only give information as to the state of the cervix during pregnancy; and in this connection Schroeder's thesis as to the cervix remaining in its normal condition up to the end of pregnancy may be accepted—except that we must remember that some weeks before birth, as is shown in such an excellent preparation as you have just seen, there is already a certain opening up of the cervical canal. According to the observations we have made in our course of obstetric palpation every term, this is not at all a rare occurrence; but the mucous membrane still retains its own particular epithelium and glands. In the unfolded parts of the cervix, and when the epithelium is smoothed out by the pressure of the fœtus, there is no question whatever of a decidual transformation: *cervix remains cervix.*" I quote this passage to show that Bumm dissociates himself from all of those who have attempted to get over the difficulty of the origin of the lower uterine segment by the thesis that before it came to be stretched in labour part of the cervix had changed its histological structure so that, if we may use the expression, it might pass for the lower part of the body. The question is thus narrowed down to a clear issue—*Can the cervix, as we find it at the end of pregnancy, contribute enough tissue to be stretched round the head of a fœtus?* This Bandl held to be impossible, saying it would become as "thin as a gold-leaf."

Bumm and Blumreich's thesis that there is no lower uterine segment is based on a study of the case of which I show you the frozen section (see Plate II.), and the clinical facts are the following:—

The patient, a primipara aged 39, after having labour pains for 17 hours, the membranes rupturing during an examination 10½ hours after the onset of the pains, died suddenly—apparently from pulmonary embolism. During the first stage there was moderate bleeding for a short time, and between the bag of membranes and the cervix small quantities of blood-clot were noticed on examination. The child is in the first position—L. O. A.—with its head deep in the pelvis, the cervix well dilated.

The Atlas contains seven plates, five of the frozen section showing the vertical mesial—the fœtus in position on both sides, and the uterine cavity, both halves. The sixth plate is a micro-photograph of the anterior and posterior parts of the disputed area, enlarged

Digitized by Google

8½ and 10 times; and the seventh shows microscopic sections of a uterus from the ninth month, before labour, which has a bag of membranes separated by a layer of mucus from the lower pole of the uterine cavity into which the cervical glands extend. It gives also a section of typical cervical glands found 0·6 in. below the retraction ring, and glands found 0·2 in. below it, which are lined in part with a high epithelium, in part with an endothelium, the space containing mucus. Two other sections are given showing how the amnion and chorion may become applied to the surface and *seem* to be united to it.

The description of these microscopic sections is prefaced with the following pregnant paragraph:—"Nothing seems simpler *a priori* than to ascertain the texture of the tissue from its microscopic appearance, but we did not find it at all easy to draw conclusions from the preparations we examined. The tissues had been considerably damaged by the lacerations of labour and by the six days' freezing process; and just in the parts which concerned us most, the superficial layers of mucous membrane in the stretched zone were in places very much injured. We had consequently to examine a great number of sections; and only by the comparison and combination of these were we able, after many erroneous interpretations, to arrive eventually at the truth. It was impossible to learn all the significant facts from one section owing to the unsatisfactory preservation of the mucous membrane."

The paper in the *Zeitschrift f. Geb. u. Gyn.* falls into two parts. The first is by Blumreich, who, after giving the clinical history and the mode of making the frozen section, draws attention to points in the naked-eye anatomy: first, the position of the bladder, which he rightly says has no bearing on the relations of the cervix; then the firm attachment of the peritoneum, which he finds only 2 mm. above the utero-vesical reflection. The pelvis is normal with a conjugata vera of 4½ in. The bladder is empty, two-thirds of it lying below the brim. The projections on the uterine wall are described and shown to correspond to depressions on the fœtus, with the exception of one ring-shaped ridge which goes almost round the whole circumference of the uterine cavity. This ridge is not marked in front, the appearance of the contraction ring being simulated by the presence of the placenta, but it is well marked posteriorly. The chief facts visible to the naked eye are thus summed up:—"First in importance is the point of attachment of the peritoneum,

Digitized by Google

PLATE II.

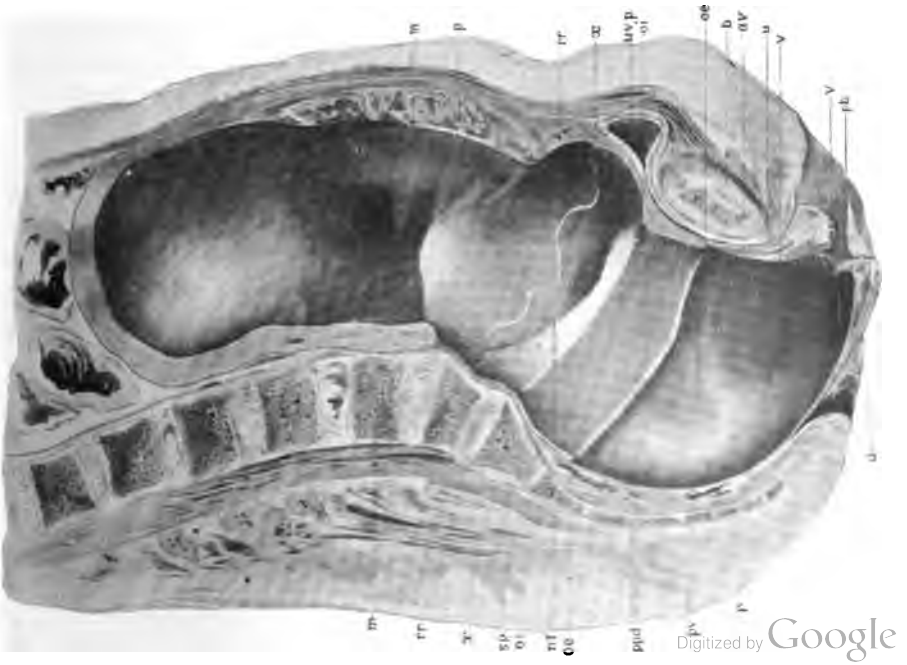

PLATE I.

Digitized by Google

Digitized by Google

in front immediately below the insertion of the placenta, and behind 0·6 in. below the projecting ridge of the contraction ring; then the division into two parts of the genital tract—the lower part with its wall very much stretched, and the upper with a considerably thicker wall, separated from one another by a sharply defined projecting ring, which in about half of its circumference shows a distinct contraction, where the wall is considerably thicker than it is above and below it."

In the second part Bumm begins by stating that pregnant uteri only give information as to the state of the cervix during pregnancy, and, as already quoted, he accepts Schroeder's position here. He discards uteri from the third stage, and the puerperium as not throwing light on the retraction ring, accepts Leopold's description of the different stages of dilatation given in the twenty-ninth plate of his Atlas *Uterus und Kind*, and states that there is no thinning of the wall of the lower uterine segment during the first stage—the apparent thinning in frozen sections being due to pressure of the contents. "Even where the cervix is fully dilated and the opening of the os externum is far advanced, there is no indication whatever of a contraction ring." The study of the question is therefore limited to sections taken from the second stage, and cases of rupture of the uterus or placenta prævia are rightly excluded.

The available material is therefore limited to four sections —Braune's, Chiari's, my own (see Plate I.), and their own. In Chiari's case the fœtus was small, and there is no contraction ring; it is therefore discarded. In Braune's no microscopic examination was made, and therefore the question is narrowed down to my own and theirs, in which "the two results directly contradict one another. . . . Considering the great similarity between the two sections, I do not think two different interpretations should be allowed: the only solution of the difference, in my opinion, is that one of us (either Barbour or ourselves) is mistaken in his interpretation of the microscopic preparation." He then criticises the micro-photograph published in my Atlas, and believes the membranes attached to the uterine wall to be an artificial production, the result of the method of preparation. To show that such a mistake might be made, he publishes microscopic sections in which such an appearance has been produced artificially.

(*To be continued.*)

Digitized by Google

A CASE OF HENOCH'S PURPURA SIMULATING INTUSSUSCEPTION.

By DAVID M. GREIG, C.M., F.R.C.S.,
Surgeon, Dundee Royal Infirmary; Lecturer on Clinical Surgery and Surgical Diseases of Children, St. Andrews University, &c.

THOUGH the syndrome of Henoch's purpura is well known, the diagnosis in a partially developed case may be so difficult that the publication of isolated cases is desirable in order that the profession may be kept alive to the principal symptoms.

The child who is the subject of the following note was referred to me by a country practitioner. He was a boy of 9 years and 4 months old, the youngest of four, the other children and parents being well and healthy. Some years previously he had had measles and inflammation of the lungs, from which he had made satisfactory recovery and had had no other illness.

On the 22nd of September he had not been feeling well, and was sick and vomited, and it was supposed that he had eaten something which had disagreed with him. On the following day he complained of pains in his legs, and had some diarrhœa. The parents stated that some blood and slime was noticed in the motions. On the 24th he was given some castor oil, and was so much better that he was supposed to have recovered. On the 25th he was out and about, and whilst playing he jumped from a wall and was supposed to have hurt his left knee, because it became swollen. On the following day the knee was well again, but at night he complained of severe abdominal pain, and he had some return of diarrhœa. He was seen by the family physician on the 27th, and was then suffering from pain in the bowels, vomiting and diarrhœa, with much painful straining, accompanied with the passage of blood from the bowel. Not unnaturally the case was thought to be intussusception. A few purpuric spots were noticed on the legs, but their import was overlooked in the prostrated appearance and urgent symptoms, and the diagnosis of intussusception preferred. Next day he was admitted to the Dundee Royal Infirmary, where I saw him. He had a pinched, drawn face, with a distinct "abdominal look," and his eyes staring and slightly turned upwards. The pulse was weak and rapid; the tongue dry and coated with brown fur. The surface of the body was hot and the child lay with his knees and thighs flexed, now and then groaning as if in pain. At intervals he vomited small quantities of brownish-yellow, offensive fluid, and complained constantly of thirst. The abdomen was held tense and rigid. There was no visible distension, and on palpation it seemed as

Digitized by Google

if the resistance was most marked to the right of the middle line, a little below the level of the umbilicus. Under chloroform a small, firm, resistant tumour could be felt in the right iliac region, below and to the right of the umbilicus, freely movable and slipping easily away from between the fingers.

No purpuric spots were noticed by my house surgeon or myself, and with the history (which was not then so detailed as above given), and the physical signs, it is not to be wondered at that I had no hesitation in accepting the diagnosis of intussusception.

No attempt was made to reduce the intussusception without cœliotomy, but having cleaned the skin I opened the abdomen in the middle line. Through this incision a tumour was easily delivered. It was then found to be due to a great congestion of the lower end of the ileum which projected as a distinct collar into the cæcum. There was no obliteration of the lumen, for the finger could easily be entered through it by inverting the bowel.

In the *Scottish Medical and Surgical Journal* for August 1906 Dr. Henry J. Dunbar, in a paper, "Acute Infantile Intussusception," figures a section of an infant's ileo-cæcal region which shows "extraordinary projection of the termination of the ileum into the colon." He further calls attention to the fact that this projection "is relatively out of all proportion to what is found in adult life," and argues that it "must constitute one of the strongest predisposing anatomical factors to intussusception; and when it is present to a marked degree one might almost say that there is a constant incipient intussusception in existence." It was this ring or collar of the ileum projecting into the cæcum which had become so intensely congested as to form a tumour, palpable from without, which I had mistaken for an invagination of the bowel. After the abdomen was closed, and the child returned to bed, a small dose of tincture of opium was administered. Next day the temperature and the pulse had improved; the vomiting had ceased; there was very little abdominal pain, and the child merely complained of some thirst. He was allowed sterilised water by the mouth.

On the next day, the 30th, it was noticed that the left side of the face was much swollen, the left eye almost closed, and the swelling extending towards the nose was firm and brawny, and though tender to the touch scarcely elicited pain. In the absence of abdominal symptoms he was allowed as much sterilised water as he now cared to drink. On 1st October all difficulty of diagnosis vanished because the swelling of the face, though somewhat less than the day before, had become discoloured as if from bruising, and was evidently of a purpuric origin. The patient seemed better and had had a very good night and complained only of thirst. Milk was allowed in addition to the sterilised

Digitized by Google

water, and late in the evening he was sick and vomited some greenish-yellow fluid. As the bowels had not moved since admission he was given a dose of castor oil. Early on the following morning he was very sick and vomited greenish-brown fluid again. He became peevish and fretful and complained of abdominal pain at intervals. He kept constantly crying for water. As a result of the castor oil the bowels moved twice this morning, the motions being dark and slimy. The vomiting continued at intervals during the afternoon, and by evening he seemed very weak and exhausted, but as the vomiting ceased he passed a quieter night than had been expected. The wound was dressed on the 3rd and found to be healed. At the dressing a profuse purpuric eruption with spots of a dark purple colour on the hands, and to a less extent on the legs and body, was discovered. These spots varied considerably in size, the largest being about the size of a sixpence. The face continued slightly swollen and very much discoloured. Calcium chloride was administered in 10-grain doses thrice daily, and two days later he was bright, cheerful and well. The stitches were removed from the abdominal wound on the 15th when all appearance of spots had gone, and five days later he was discharged home and there has been no recurrence within the past eighteen months.

The illness, for Henoch's purpura essentially consists of recurrent attacks separated by periods of well-being, was, in this case, characterised by three distinct attacks. The first was so slight that it was seen by no trained observer but treated by ordinary domestic remedies for gastro-intestinal disturbance. A period of four days elapsed before the second attack came on. This was much more severe, and it was during this attack that the cœliotomy was done. Between this and the final attack a period of six days elapsed, during part of which the boy seemed to be in absolute health. The third attack was also a severe one, but as the diagnosis was now certain it was successfully treated on general lines.

It might be interesting to note that though his mother stated that the boy had never had purpura before, the patient, who was remarkably observant and intelligent, asserted definitely that he had had such spots, but that they had not been accompanied by pain or gastro-intestinal disturbance. I do not know that we can accept the boy's statement as to the previous appearance of such purpuric spots because I am not aware that purpura, in any of its forms, predisposes to Henoch's purpura or *vice versâ*. The child's observation may have been sufficient to awake in him a desire for the continuance of that degree of attention which his interesting illness evoked, and a leading question or a recollection of some childish bruises may have led to a "terminological inexactitude."

Digitized by Google

The causal relations of Henoch's purpura is invariably gastro-intestinal disturbance. The explanation has been offered and there seems much probability that it is correct that "bacterial toxins are generated in the intestinal canal and break down albumins into peptones which become absorbed into the circulation and may produce poisonous effects upon the delicate capillary walls and upon the vaso-motor nerves. Evidence of implication of the latter is instanced by curious evanescent flushes of the skin, erythemata, tâches cérébrales, and urticarial eruptions common in this affection; the absence of knee jerks may mean that the poison, like that of post-diphtheric paralysis, has some selective action upon the neuronic terminals." (*British Jour., Child. Dis.*, Lond., vol. i. p. 42.)

The performance of cœliotomy requires no defence. At the time of operation there was an absence of any history of purpura. The sudden onset, the vomiting, the abdominal pain, the passage of blood and slime repeated, and above all the presence of an abdominal tumour, rendered the diagnosis of intussusception not only justifiable but absolutely inevitable, and having made this diagnosis cœliotomy was necessary. With such symptoms to have avoided a cœliotomy on the odd chance that we had to deal with a Henoch's purpura was much too dangerous a procedure for contemplation, while, on the other hand, a cœliotomy in a case of Henoch's purpura does not seem materially to add to the dangers of the disease. A similar error has been committed many times, and the publication of such cases has called forth no apology, though to my mind the operative procedure in many of them might have been with safety, so far as the symptoms were concerned, withheld.

As regards treatment there is very little to say. The vomiting and purging are nature's efforts to eliminate the poison, and if one has to introduce fluid into the body to counteract this loss, it may be done subcutaneously or by the gastro-intestinal tract, but the fluid must be sterilised. Ice to the abdomen is recommended by some, and the severe pain may be held in check by the judicious administration of opium.

I have seen other two cases of Henoch's purpura of which I am sure. One in which there were three relapses, was absolutely typical in a young schoolboy, but the coincident appearance of the purpura with the gastro-intestinal disturbances precluded any difficulty there might have been in the diagnosis, and the other was a lad of some twelve years, in whose case the initial abdominal symptoms simulated for some hours, with great closeness, the onset of a severe appendicitis.

Digitized by Google

CASE OF CHRONIC INTUSSUSCEPTION.

By J. WALLACE MILNE, M.B., C.M., M.R.C.S., L.R.C.P.,
Senior Assistant Surgeon, Aberdeen Royal Infirmary.

THE following notes, which I read at a meeting of the Medico-Chirurgical Society of Aberdeen on 6th February, relate to a case presenting such uncommon features both in nature of commencement and nature of enfolding of bowel, that I think them worthy of publication.

The case was in Dr. Riddell's ward this past autumn, where I was acting at the time during his holidays. I am indebted for the notes largely to Dr. George Mitchell, house surgeon, to whose assiduity in the post-operative management the patient owes her life.

J. P. (girl), then aged 10 years, was admitted to the ward on September 23, 1907, with the following history:—Six days previously she got a sudden fright as the result of her brother springing out from behind a door at her. She immediately complained of severe pain in the upper part of the right side of her abdomen. The pain at first lasted for a few hours only, but on the following night she was seized while in bed with the same violent pain, and the pain from this second onset persisted, though the severity was somewhat lessened. After this second attack vomiting and hiccough commenced, and continued off and on till admission. The bowels acted spontaneously *three* times between the second attack and admission—that is, three times in five days. No blood and no mucus was seen in the stools.

State on Admission.—When I saw the child walk into the ward with her father she did not strike me as being very unwell at all. She was thin and white and rather fragile-looking, but not showing any distress. Pulse was 110, respirations 18, and the abdomen moving freely, temperature 98·8. On inspection there was slight fulness seen in the right iliac fossa, and on palpation slight tenderness internal to the right anterior superior spine of the ileum (the patient had not had opiates), and on deep palpation an elongated tumour was felt in this region, and there was impaired resonance on deep percussion. Nothing abnormal per rectum.

Now I know not whether it will be conceded that I took the best possible course from this point, but in the face of a collection of such negative and almost reassuring symptoms, I resolved on expectant treatment. I considered that the diagnosis of intussusception was made out, and, being satisfied that it had lasted not less than five days, and probably for six, adhesions between suscipiens and sus-

Digitized by Google

ceptum would be so well and firmly established that inflation or forcible injection of fluid, or inversion, &c., would be useless. The vomiting had ceased, and there was not even nausea. Thus the patient lay for the next six days with no sickness, and one movement of the bowels by enema on an average *per diem*. No blood and no mucus passed whatever.

On the morning of the seventh day symptoms of acute obstruction came on—vomiting, distension and collapse—and operation was resolved upon at once. I opened the abdomen by an incision along the right border of the right rectus, and immediately enucleated an intussusception. This proved to be of the triple or telescopic variety; the ileum was seen disappearing into the cæcum, carrying the appendix with it, and I commenced expressing the susceptum from the ascending colon, which proved an easy matter, as there were no adhesions round the invaginated part. Then, to my surprise, there appeared a tight gangrenous intussusception of ileum into ileum, which could not be expressed, and indeed even very gingerly manipulation caused tearing of the suscipiens, so I resolved on resection of the part.

[The specimen was shown at the meeting, and, counting the duplication, I should think it measured 8 or 9 inches.]

The bowel was clamped well away from the blackened portion on each side. The mesentery secured in the form of a V by interlocked mass ligatures, the bowel cut, the mesentery cut, the V closed, and the bowel united by a double ring of sutures, an inner one of catgut through all the coats, and an outer of bowel silk. The intestine was cut short of the mesentery left, to insure ample nourishment, and also—and what is, I think, an important point—to assure that the redundant sutured mesentery would prevent subsequent invagination. The excised portion was entirely of small infestine, and the patient still has her appendix. There was no drain used. The subsequent course of the case was very gratifying, except that for four days the bowels remained inert, and there was a rise of temperature. No opening medicine was used, but a glycerine enema had an excellent result on the fifth day, and henceforth all went well, and the wound healed fairly fast.

On the forty-fourth day, when the patient was about to be sent to the Convalescent Home, she developed a temperature for the first time, and it went up to 102·5. The chest was examined, and an empyema diagnosed on the left side. This I treated on the next day by resection of one inch of rib; secured excellent dependant drainage; the temperature fell to normal or subnormal. The wound healed nicely, and she was sent to the Convalescent Home on the fifty-fifth day after

Digitized by Google

the empyema operation, or the hundredth of her hospital stay. She was shown at the Society's meeting.

The case is interesting from many points of view, and the chief thing to my mind about it is the absence of the classical symptoms. I take it that all will agree that where blood and mucus appears in the stools, especially in a child, and where there is no possibility of dysentery, and more especially where there is a palpable tumour, it is time to open the abdomen. With these urgent features no harm can follow a trial at inflation, &c., always assuming that in case of failure one is prepared to operate.

In this case was I wrong in waiting? I think not. Would I do the same again? I think I would, for was it not due to the secondary invagination—evidently recent from its appearance and from the absence of lymphy exudate—that acute obstruction took place? Was not Nature preparing here, and preparing before I saw the patient, to throw off the susceptum? and have we not all of us, or at least many of us, seen her succeed; and is not the reduction of a simple intussusception a proceeding liable to fail when it ought to succeed; and does not the very chronicity of a bowel lesion, so long as it is not leading to obstruction (which kills only by toxæmia), enable it to stand more free manipulation than in an acute condition? I am sure it does. In any case the diverse opinions expressed at the meeting suggest that there is and can be no accepted line of treatment in such exceptional cases. I stated at the meeting that the pus in the empyema was not examined, but Dr. Mitchell afterwards imformed me that it was, and contained streptococci, the origin of which I take to have been apart altogether from the abdominal condition, judging from its late appearance and its distance from the original lesion, with absence of any intervening focus.

DIRECT LARYNGOSCOPY, TRACHEOSCOPY, BRONCHOSCOPY AND ŒSOPHAGOSCOPY.

By J. S. FRASER, M.B., F.R.C.S.

In 1868 Kussmaul attempted direct œsophagoscopy, but it was not till 1895 that the possibilities of the bronchoscope were shown by Killian, who, in 1897, removed a bone from the trachea by this method. Killian demonstrated that the bronchi were distensible and freely movable; that tubes could be readily introduced into the air-passages; and that the right and left ramifications of the bronchi could be explored.

Digitized by Google

Indications.—Foreign bodies in the trachea, bronchi or œsophagus. Killian has removed 164 of these from the trachea and bronchi, and informed the writer of this abstract that in many cases it was necessary to invent a special instrument in order to extract a foreign body of a kind not previously met with. The number of these extractors is by this time very large. Wylie thinks that direct laryngoscopy will in the future be specially useful in the diagnosis and treatment of diseases and tumours of the larynx. The galvano cautery may be easily and safely used by this means. Papillomata in children can be removed much more easily by direct laryngoscopy than by the ordinary methods. Diverticula of the œsophagus, and strictures and stenoses of the larynx, bronchi and œsophagus can be examined, and some of them treated by these methods. Chevalier Jackson has examined the pylorus by gastroscopy. Killian advises that his method should be used for the treatment of intra-tracheal affections, for the diagnosis of tumour of the anterior mediastinum, and hypertrophies of the thymus and thyroid glands. He claims that bronchoscopy may give great aid in the surgery of the lung—"To each bronchus belongs a conical-shaped patch of lung tissue, into whose apex the bronchus passes, and whose base lies on the thoracic wall. The position of the base on this wall fixes the place from which the focus may be surgically reached." Bismuth may be blown into an abscess cavity by this method, in order that a Röntgengraph may be taken preliminary to opening the abscess from the chest wall. A sound can be introduced and cut down upon, or a foreign body may be located and cut down upon, if it cannot be extracted by the bronchoscope. Mosher states that coins and whistles are the foreign bodies which usually lodge in a child's œsophagus, and that, in adults, dentures are the most common objects which stick in the gullet.

Contra-indications.—Extreme nervousness, advanced age, rigidity of spinal column, cachexia, advanced tuberculosis, emphysema, acute pulmonary and bronchial affections, aneurysm of the aorta, and organic heart disease.

Instruments.—Killian's tubes, or some modification with lateral openings, are almost invariably used: their introduction is facilitated by the same writer's tube spatula, but Mosher has devised a speculum, which is a modification of Kirstein's spatula, and is so constructed that the operator has a larger aperture to work

Digitized by Google

through than when Killian's tubes are used. The source of light may be either (1) a forehead mirror, reflecting a strong light, such as is obtained from a Nernst lamp, or (2) Kirstein's forehead lamp, or (3) Kirstein's hand lamp fixed on to his tube spatula, or (4) an electric lamp at the distal end of the tube (Chevalier Jackson). As regards the instruments for removal of a foreign body, it has already been mentioned that these are very numerous. Paterson's forceps, or some modification, are frequently used for bodies situated not too far down. A good Röntgengraph helps in the diagnosis of the site of the foreign body.

Difficulties.—Resistance of muscles: this is specially felt in performing œsophagoscopy (Mosher). The cricoid cartilage and the inferior constrictor form great obstacles to the passage of instruments. The head must not be bent too far back, as this position causes increased tension on the cricoid.

In regard to the larynx, severe spasm and cough may be set up. A profuse secretion of saliva and mucus may spoil the view, or hæmorrhage may greatly interfere with the examination.

When a general anæsthetic is used, we must also mention the difficulty of keeping the patient under. A good set of teeth and a short thickset neck are disadvantages, and adhesions due to wearing a tracheotomy tube and bilateral abductor paralysis may cause trouble during the introduction of the tube. In some cases an obturator is used, so constructed that the patient may breathe through it, and Chevalier Jackson uses a tube the distal end of which is cut off at an angle so as to facilitate its introduction.

Anæsthetics and Method of Procedure. — For œsophagoscopy local anæsthesia, obtained by swabbing the base of the tongue, epiglottis and laryngo-pharynx with 10-20 per cent. cocaine, is usually sufficient. The patient is seated on a very low stool, and the operator stands in front of him. The tube spatula is not required, the œsophagoscope, with the obturator in position, being passed into the laryngo-pharynx under the guidance of the forefinger of the left hand as in intubation. Mosher finds that the tube is more easily introduced if it is kept applied to the lateral wall of the pharynx until the cricoid is passed. The tube should in all cases be warmed and lubricated with vaseline, and no force must be used. When the tube has once entered the œsophagus there is usually no further difficulty.

Direct laryngoscopy and bronchoscopy can sometimes be per-

Digitized by Google

formed under local anæsthesia; the position of the patient and operator is that stated above; the base of the tongue is swabbed with 20 per cent. cocaine (Killian), and the divided tube spatula passed over the middle of the tongue and placed between the tongue and epiglottis. The interior of the larynx is now brushed with 20 per cent. cocaine, and after an interval the point of the spatula is passed over the epiglottis, which is thus pulled upwards and forwards. The bronchoscope is now passed through the tube spatula and the cords are watched, and on the inspiratory outward movement the end of the bronchoscope is pushed through between the cords into the upper part of the trachea, where cocaine is again applied and the tube is, if necessary, passed on down to the bifurcation. When a general anæsthetic is given Rowe's position is used—the patient lies supine on the table with his head hanging over the end. An assistant steadies and supports the head from one side while the operator sits facing the patient. Killian prefers the mouth as a means of access, and only uses a tracheotomy wound in cases of urgent dyspnœa, or where the foreign body is large and irregular (dentures) or liable to swell up (beans), but in all cases it is advisable to have tracheotomy instruments ready. The procedure under a general anæsthetic is similar to that employed where cocaine alone is used, allowance being made for the difference in the patient's position. The upper teeth of the patient must not be used as a fulcrum on which to work the tube spatula. When the bronchoscope has entered the trachea a gag is inserted, and the separable speculum removed in two pieces.

References.

Killian. *Laryngoscope.* Vol. xvi. No. 12.
Mosher. *Massachusetts General Hospital Reports.* June 1907.
Chevalier Jackson. *Journal of Laryngology.* Dec. 1907.
Chenery. *Laryngoscope.* April 1907.
Wylie. *Journal of Laryngology.* Nov. 1907.
Paterson. *Journal of Laryngology.* July 1907.

Digitized by Google

THE USE OF CHRYSAROBIN IN PSORIASIS.

By NORMAN WALKER, M.D.

THE value of chrysarobin in the treatment of psoriasis is referred to in every text-book more or less favourably, but the disagreeable effects—production of erythema of the face and conjunctivitis, and the indelible staining of the clothes—tend very much to limit its use.

One is further hampered in the treatment of this common disease by the unfortunately prevalent belief in its incurability. If the physician regards the disease as incurable, and the patient shares the belief that he cannot be cured, not much energy is likely to be devoted to any treatment. I do not propose here to discuss the question of psoriasis as a whole, and merely express my conviction that psoriasis is often cured, and can always be greatly benefited, by proper treatment. The eruption can be removed, and even if it does return, as it often will, the intervals of freedom are greatly appreciated by the sufferer.

In treating the diseases of the skin one is always faced with the difficulty that the patient expects to be cured without in any way interfering with his ordinary avocations. If he insists upon this, then I believe the prevalent view of the prognosis of psoriasis has some justification. In any case, if the patient will not give himself up to treatment some other method than the chrysarobin one ought to be chosen.

All cases are not suitable; if the skin is much inflamed, if there is at any part evident exudation, then chrysarobin is unsuitable.

The plate opposite—from one of my colleague Dr. Cranston Low's casts—shows the sort of case best adapted for its use.

Granted then that the patient gives himself up entirely to treatment, as he does when he becomes a patient in the wards of an infirmary, it has for some time been my object to discover what means are available for rendering the period of treatment required as short as possible.

We have tried various combinations of ointment but have come to the conclusion that continuous application is the most important factor.

Unna's compound chrysarobin ointment is therefore inadmissible. It contains 2 per cent. of salicylic acid, which, when continuously applied, is almost always absorbed and produces unpleasant results.

Digitized by Google

PSORIASIS.

Digitized by Google

Digitized by Google

Many old prescriptions contain considerable amounts of alkali either in the form of soft soap or of the carbonate of potash. In the hope that the action of the alkali would hasten matters we have used ointments containing chrysarobin ℥js with soft soap ℥i, or a corresponding amount of other alkali to the ounce.

The results were disappointing; in continuous application the alkali seeming to hinder rather than to help the chrysarobin effect.

The addition of organic acids to the prescription was also disappointing in its results, and we have returned to the use of a simple ointment of half a drachm of chrysarobin to the ounce of vaseline. Comparative experiments have satisfied us that vaseline is by far the best basis for the ointment used in this continuous method. If one treats one limb with a vaseline dressing and the other with lard, &c., one is very soon convinced of the superiority of vaseline as a base—I speak here of this treatment only.

But the alkalis have their uses, and in robust individuals the first bath—in which all the scales are removed with a nail brush—may be followed by a soft-soap dressing which may remain on for 24 hours. If this is used it must be followed by another bath to get rid of any excess of alkali in the skin before the chrysarobin treatment proper begins.

The famous Mr. Dooley, in his Dialogue on Christian Science, says that in pneumonia it does not seriously matter whether you are attended by a doctor or a Christian Scientist, "provided y've a good nurrse."

In the rapid treatment of psoriasis the most important factor is a nurse who thoroughly understands the treatment and relentlessly carries it out.

After a bath, in which any scales present are removed, the patient is inspected and the exact distribution of the eruption noted. He is then rubbed vigorously all over with a 5 per cent. chrysarobin ointment. Dressings spread with this same ointment are then carefully applied to every part of the surface from the neck downwards. Bandages suffice for the limbs, but the dressings for the trunk must be sewn together so as to keep them in position. If the scales re-form the patient must be bathed again, but as a rule they do not.

The disagreeable occurrence of dermatitis on the face is not due to absorption of the drug, but to its conveyance to the face by the patient's hands, or the bedclothes, and we generally succeed in

Digitized by Google

avoiding it by making the patient wear continuously, except at meals, a linen mask.

After a day or two of treatment the skin of certain regions, notably the flexures, becomes red and painful. If there are any psoriasis lesions on the area the discomfort should be endured. Fortunately, however, for the patient, the regions thus disagreeably affected are usually free from the disease, and the comfort of the patient can be greatly increased by smearing these regions with a simple paste of oxide of zinc and vaseline.

The second of the plates is one which I have long been desirous of procuring and reproducing. It represents casts by Dr. Low of the same area at various stages of the treatment, and indicates better than any description of mine can do the effective use of chrysarobin.

In Fig. 1 we have a small area of the patient's back before any treatment has been adopted. Fig. 2 is from the same part, taken after seven days of treatment. It shows excellently the state of inflammation into which the healthy areas of skin are brought by the application, and the resistance of the skin on the psoriatic areas to irritation. This is the stage at which the treatment is too often arrested. The inflammation settles down; as it does so the psoriatic spots again become evident, and the faith both of the doctor and the patient in the method is grievously shaken or fails altogether.

Pautrier, in discussing the chrysarobin treatment, uses the phrase, "Pas d'erytheme, pas de guerison." With his meaning I entirely agree, but I do not think it is sufficiently understood that the erythema which is aimed at is not that of the intervening areas of healthy skin, on which it is quite easy to produce the redness, but that of those areas which are the seats of psoriasis. At this stage another thorough inspection of the patient is made, and those spots which are lagging behind the others must be subjected to yet more energetic treatment to bring them into line with the others. My experience does not accord with that of those who maintain that chrysarobin applied to one part of the body will cause the disappearance of lesions on other parts of the body to which it has not been applied. I am ready to concede that if one leg is rubbed with chrysarobin ointment and the other left alone, that other will in a day or two show some of the effects. These are due to the indirect application of the

Digitized by Google

CHRYSAROBIN TREATMENT OF PSORIASIS.

BEFORE TREATMENT.

AFTER ONE WEEK.

END OF CHRYSAROBIN TREATMENT.

Digitized by Google

Digitized by Google

drug, either by rubbing one leg against the other, or still more indirectly through the bedclothes. Very often, in spite of attention, one or two lesions, especially on those areas to which it is more difficult to apply dressings, are found persisting, when the patient has a right to expect that the treatment is concluded, and therefore the inspection at this stage when the defect may still be remedied is all important.

These lagging spots must be treated by an ointment in which other drugs are brought to the aid of the chrysarobin. Five per cent. of salicylic acid is a useful addition, so is tar. As already indicated, I have not found alkalies very useful additions to chrysarobin; and I believe that Drew's ointment, which is often useful at this stage, though especially so for those cases where the lesions are few in numbers, owes its easily demonstrated efficiency to its other ingredients, and its strength. It is as follows:—

℞ Chrysarobin		
Ol Rusci . .	āā	pts. 20.
Acidi salicyl . .	„	10.
Saponis viridis		
Vaseline . .	āā	pts. 25.

One of these reinforced ointments is applied to the laggard spots, and to the rest of the body the treatment is continued as before until the state of matters represented in Fig. 3 is brought about—until the erythema appears *on the affected areas.* This will be in from eight to eleven days from the commencement of the treatment. As the common error is too early arrest of the treatment, it is not a bad plan to allow the patient to rest in his dirty dressings for a day or two more. He will not be comfortable, but the fact that no fresh application is being made may be made judicious use of and the discomfort explained away. Eventually one, or better, two, warm baths in succession are taken, and the patient should be found on examination free from his disease.

Sometimes the cure is permanent, more often it has to be repeated, but as a rule it is followed by a period of freedom, often so long that the patient considers his fortnight's incarceration well spent time.

I have not dealt with the subject of psoriasis of the scalp. Those who are familiar with my views know that it is to the treatment of that region that I attach most importance in the successful treatment of psoriasis. Unfortunately the inconvenience attached

Digitized by Google

to the use of chrysarobin in this region render it, as a rule, an undesirable application. No ordinary means of application will prevent some of the drug reaching the face and producing the inevitable erythema and conjunctivitis. But if it is thought necessary to use chrysarobin in this situation it can be done. Unna's method of applying, with the aid of zinc gelatine, a barrier of gutta-percha tissue between the forehead and the scalp may be adopted, or the scalp may be shaved and Hodara's formula of chrysarobin ʒi, chloroform meth. and glycerine, of each ʒss, may be applied. This does not "run" as do ointments, and after its application the region treated may be covered with cotton-wool and carefully bandaged.

But, as a rule, other methods are preferable, and it is to the efficient use of the drug in psoriasis of the body that the above remarks are especially devoted.

ON THE RELIABILITY OF CALMETTE'S OPHTHALMO-TUBERCULIN REACTION.

By G. LOVELL GULLAND, M.D., F.R.C.P.,
Physician to the Royal Victoria and Chalmers's Hospitals; Assistant Physician to the Royal Infirmary;

and

D. J. WILLIAMSON, M.B.,
Resident Physician to the Royal Victoria Hospital.

(*Written by Dr. Gulland.*)

As I have used this reaction very largely during the last few months, I thought it wise before allowing myself to rely upon it completely to make a series of tests with it on patients who were known to be tubercular, and who, of course, were ready to my hand in my wards at the Royal Victoria Hospital. Similar series of cases have been examined by many other observers, but as it is only the accumulation of a large amount of evidence that enables one to judge with certainty of the accuracy of these reactions, I may be excused for publishing these notes. The tests were carried out by my Resident Physician, Dr. D. J. Williamson, to whom I am indebted for minute notes of the cases.

The test was made in the usual way, now quite familiar to the profession. The only precaution taken was that if an eye were at all congested, it was not used for the purposes of observation

Digitized by Google

until after it had been washed out for a day or two with boracic lotion. This precaution was taken because of one disastrous case which has occurred, where the use of the test brought about destruction of the eye. Though I have now used the test in a very large number of cases, I have never seen any permanent or even prolonged congestion of the eye result, and no permanent trouble at all. It would, of course, be obviously unwise to use the test in eyes where suppurative organisms were already present. One point which it is important to note is that even with a very considerable amount of congestion and swelling there is remarkably little pain or discomfort. I have always thought it wise as soon as the reaction was ascertained to bathe the eye with an antiseptic solution, except in cases where it was definitely desired to ascertain how long the reaction lasted.

The points which we tried to make out with regard to these cases were: How long the reaction was in appearing; whether there was any definite relation between severity of reaction and the amount of mischief in the chest; how the duration of the reaction varied; and whether the age of the patient or any other consideration had any effect upon it.

The following table brings out the results with sufficient clearness. It will be seen that several of the cases in which the reaction was doubtful or absent showed a reaction on a second trial, though in some cases this was again slight. The other cases which did not show the reaction, and in which the attempt to bring it out was not repeated, were cases which were just on the point of leaving hospital when the test was made in their case.

Case X. was one in which there was considerable difficulty as to the diagnosis. There was a great deal of bronchitis, but there was considerable doubt whether the cavity was tubercular or not. All the others were definitely cases of tubercle, even though in some instances there were no bacilli in the sputum, or this was entirely absent.

I choose two cases for report in full, to illustrate the difference between a slight and a marked reaction.

Case XII.—Slight reaction. Dulness at both apices, the right is tympanitic, with amphoric breathing and whispering pectoriloquy. Crepitations at the left apex. Tuberculin was inserted on the morning of the 25th November. During the whole of that day nothing was visible; no discomfort was felt. On the

Digitized by Google

morning of the 26th the eye was found to be slightly red and watery. There was some muco-pus at the inner canthus, with slight discomfort which soon passed off during the day. The next morning the eye was not so red; there was still a little muco-pus; all the appearances passed off during the course of the day.

CASE XIX.—Well-marked reaction. Absolute dulness with tympanitic areas at both apices; numerous crepitations on both sides in front and the left side behind. Consonating crepitations at the left apex back and front. The test was applied at 1 P.M. on the 13th December. At 6 P.M. there was a definite redness of the mucous membrane, but no discomfort. On the morning of the 14th the eyelids were found to be stuck together; there was definite redness, some muco-pus and epiphora. This lasted all day, though without discomfort. On the 15th the eye was again closed; the appearance remained the same; the caruncle was swollen and red; the epiphora continued all day. The patient felt inclined to rub his eye, but otherwise there was no discomfort. On the 16th the eye was again closed; the appearances remained the same, but rather less marked. On the 17th the eye was still slightly red and itching, but during the course of the day its appearance improved, and on the 18th gradually passed off completely.

I might have used a much larger number of cases, but considered it unnecessary to do so, as these very fully illustrate the great variations which may be expected in the reaction. It will be seen that there is practically no relation between the age or condition of the patient, the state of the lungs, the activity or quiescence of the lesion, and the amount of duration of the reaction. Some of the slight cases gave slight reactions, but, on the other hand, some of the very advanced ones also gave slight reactions or none; and some of the slight lesions gave marked reactions. The time after the application of the test at which the reaction appeared shows a much greater variation than has usually been noted. In six of the twenty-eight cases it did not appear until twenty-four hours or more had elapsed, and though in these cases it was always slight, some of them were very bad cases of phthisis. The duration of the change in the eye also shows a great range of variation. Generally speaking, the more rapid the onset the longer the duration and the more severe the reaction. The necessity for repetition of the test in cases of doubtful or absent reaction is very well brought out by the repeat cases which I have quoted.

Digitized by Google

	Sex.	Age.	State of Lungs.	Active or Quiescent.	T. Bs.	Reaction.	Onset.	Duration.
1. R. E.	M.	23	Marked double apical . .	Active	×	Marked	3 hours	3 days
2. J. H.	M.	17	Very slight double apical .	Quiescent	No sputum	Slight	3 hours	3 days
3. D. P.	M.	22	Marked double apical . .	Active	×	Definite	3 hours	4 days
4. A. M.	M.	25	„ „ „ . .	Active	× × ×	Doubtful		
5. G. P.	M.	22	Mainly right apical . .	Quiescent	×	Absent		
6. W. A.	M.	22	Slight double apical . .	Quiescent	—	Marked	8 hours	5 days
7. W. C.	M.	32	Double apical . . .	Quiescent	×	Definite	7 hours	4 days
8. J. G.	M.	24	Mainly left upper and lower	Active	× ×	Marked	6 hours	4 days
9. A. H.	M.	43	Very advanced case . .	Active	× × ×	Absent		
10. H. P.	M.	47	Cavity left apex . . .	Quiescent	—	Absent		
11. L. B.	F.	18	Slight double apical . .	Quiescent	No sputum	Very slight	26 hours	1 day
12. J. M.	F.	27	Marked double apical . .	Active	× ×	Slight	24 hours	2 days
13. A. M.	F.	13	Slight „ „ . .	Quiescent	No sputum	Absent		
14. M. N.	F.	20	Mainly left apical . . .	Active	×	Absent		
15. L. T.	F.	25	Very advanced . . .	Active	× ×	Very slight	24 hours	36 hours
16. C. T.	F.	24	Well-marked double . .	Active	×	Slight	9 hours	3 days
17. J. W.	F.	18	Marked double apical . .	Active	×	Slight	24 hours	2 days
18. T. G.	M.	35	„ „ „ . .	Active	×	Very slight	24 hours	4 days
19. R. M.	M.	22	Advanced case . . .	Active	×	Well marked	5 hours	5 days
20. F. R.	M.	22	Mainly right apex . .	Quiescent	No sputum	Slight	5 hours	2 days
21. J. M.	F.	28	Marked double apical . .	Active	×	Absent		
22. E. W.	F.	18	„ „ „ . .	Active	×	Marked	5 hours	4 days
23. W. B.	M.	31	„ „ „ . .	Active	×	Slight	2 hours	3 days
24. G. P.	M.	38	Slight „ „ . .	Quiescent	—	Slight	24 hours	2 days
25. M. M.	F.	18	„ „ „ . .	Quiescent	No sputum	Definite	4 hours	3 days
26. J. F.	F.	17	Marked „ „ . .	Active	No sputum	Absent		
27. A. B.	M.	16	„ „ „ . .	Quiescent	No sputum	Very slight	8 hours	1 day
28. R. R.	M.	30	„ „ „ . .	Active	×	Marked	3 hours	4 days
Repeats.								
4. A. M.						Definite	7 hours	2 days
13. A. M.						Slight	3 hours	2 days
5. G. P.						Slight	8 hours	1 day
11. L. B.						Marked	3 hours	3 days
9. A. H.						Definite	7 hours	2 days

Digitized by Google

In these cases there was in the first trial no difference whatever in the method of applying the test, and they came up in different batches; that is to say, patients who gave no reaction were very often done from the same tube of material which produced a marked reaction in other cases. The inference is obvious that in cases where tubercle is suspected a single negative reaction should not be held to be conclusive, and I have found in other cases that occasionally a second trial will give a positive result where the first trial had been negative.

One might cite numerous cases in which the test has been of service in diagnosis, but this has been done by others, and the applications of the test are obvious enough. I have found it of special value in doubtful pulmonary lesions, where sputum was not available or gave negative results, though, as a general rule, of course the physical examination is sufficient; in pleural effusions, where signs, cytodiagnosis and blood gave doubtful evidence; in abdominal tuberculosis, in kidney disease, &c. One case of intractable diarrhœa, with nothing definite in the abdomen, gave a marked reaction; tubercular ulceration of the bowel was diagnosed, and this was afterwards confirmed by the sigmoidoscope. During the earlier months of last winter the test was made part of the routine examination of all the cases entering the public wards in Chalmers's Hospital, and though naturally most of the cases did not react, valuable information was sometimes obtained. One case in particular impressed me. The patient was a girl of 23, who had suffered from recurrent attacks of chorea for seven years. She was well-built, had no temperature, a slow pulse, no cough, but did not look well. The heart had been damaged, but the resident physician did not detect any abnormality in the lungs. Her eye gave a good reaction, and on more careful examination slight dulness, with a few crepitations, were discovered at the right apex.

The conclusion to which I have come with regard to the test is that it is of great value when it gives a positive result. I have never seen a positive result in a case in which I was unable to find some tubercular lesion. On the other hand, it is sometimes almost too delicate, for a positive result may be given by an entirely obsolete lesion, and one's attention may in that way be distracted from some coincident process of more immediate importance.

Digitized by Google

It is not so valuable when the result is negative or doubtful, if only one examination can be made. This point is well brought out by the table. But when the test can be repeated each successive negative becomes of importance, not in arithmetical but rather in geometrical ratio.

The variations in time of onset are of importance. One must not too quickly conclude that the test is negative. Reaction may be delayed for twenty-four hours, but very rarely longer; and when it has commenced a few hours after application it will practically always be recognisable on the following day.

NOTES ON A CASE OF PERFORATION OF THE APPENDIX IN THE RIGHT INGUINAL CANAL OF A PATIENT AGED SEVENTY-FIVE.

By GEORGE L. CHIENE, M.B., F.R.C.S.,
Assistant Surgeon, the Royal Infirmary.

HAVING read with interest the "Notes of Clinical Cases" by Mr. George Halley and Mr. G. F. Whyte in last month's *Journal*, I think the following case may be worthy of record:—

Last July a male patient aged seventy-five was admitted to Professor Chiene's wards when I was in charge.

Previous History.—For fifty years he had suffered from an inguinal hernia on the left side, for which he had worn a single truss. Three years before admission a small swelling developed on the right side, but it was always easily reduced; since its appearance the single truss had been changed for a double one. Ten days before admission a tender swelling appeared in the region of the right inguinal canal. It was painful to the touch and has never disappeared since first noticed. There had been no signs of obstruction, no vomiting, and the bowels moved regularly.

State on Admission. — A swelling was visible in the region of the right inguinal canal extending from the internal to the external ring. The skin over it was red and œdematous, and on palpation it was excessively painful. The temperature was slightly irregular, but otherwise the patient appeared in good health; he had walked up to the ward.

Under chloroform distinct fluctuation could be made out; an incision was made over the swelling and the canal exposed. It was found full of pus, lying in the centre of which was the appendix perforated about

Digitized by Google

its middle. The sac was adherent to the surrounding parts, which were thickened and matted, giving one the impression that the perforation had taken place some time previously.

The pus was removed, the appendix pulled on to expose its attachment to the cæcum (which appeared perfectly healthy and did not form part of the abscess wall). The appendix was then amputated in the usual way through the internal ring.

The external oblique was partially drawn together, the abscess cavity drained and allowed to granulate. The patient left for the north three weeks after the operation with the wound healed; since then he has remained well.

Births and Deaths in Eight of the Principal Towns of Scotland during February 1908.

DURING the month of February 1908 there were registered in the towns of Glasgow, Edinburgh, Dundee, Aberdeen, Paisley, Leith, Greenock and Perth the births of 3705 living children, of whom 1969 were male and 1736 female. These births are 493 fewer than those registered in January, but 68 more than those registered in February of last year. The equivalent annual birth-rate of the month is 25·4 per thousand of the estimated population of these towns, a rate which is 1·5 less than that of January, and 0·8 less than that of February of last year. The birth-rate of the month ranged from 30·5 in Leith to 19·8 in Edinburgh. In Greenock it was 29·7; in Glasgow 26·7; in Dundee 26·1; in Aberdeen 25·1; in Paisley 25·1; and in Perth 25·1.

Of the 3705 births, 293, or 7·9 per cent., were illegitimate, a rate of illegitimacy which is 1·1 higher than that of January, and 0·7 higher than that of February of last year. This rate for the month ranged from 13·9 in Edinburgh to 3·9 in Paisley and Leith. In Aberdeen it was 8·7; in Glasgow 7·3; in Perth 7·1; in Dundee 6·9; and in Greenock 4·1.

Deaths registered in these towns during the month numbered 3110, of which 1517 were of males and 1593 of females. These deaths are 482 fewer than in January, but 170 more than in February of last year. The equivalent annual death-rate is 21·3 per thousand, a rate which is 1·7 less than that of January, but 0·2 more than that of February of last year. The death-rate of the month ranged from 26·5 in Perth to 18·4 in Aberdeen. In Dundee it was 24·6; in Leith 24·5; in Paisley 21·6; in Glasgow 21·4; in Greenock 20·9; and in Edinburgh 19·5. The death-rates of the month in Glasgow and

Digitized by Google

Greenock are lower than those of January, but the death-rates of the month in the other towns are all higher than in that month.

Of the 3110 deaths registered in the towns during the month, 1159, or 37·3 per cent., were of children of less than 5 years old; and 840, or 27·0 per cent., were of persons of over 60. The former are 207 fewer than in the previous month, but 231 more than in the corresponding month of last year; the latter are 119 fewer than in the previous month, and 18 fewer than in the corresponding month of last year.

Deaths of children of less than 1 year old numbered 627, a number which is equivalent to an infantile mortality-rate of 164 per thousand births, a rate which is 9 less than that of January but 22 more than that of February of last year. The infantile mortality-rate of the month ranged from 238 in Perth to 130 in Paisley. In Dundee it was 202; in Aberdeen 179; in Leith 175; in Greenock 170; in Glasgow 159; and in Edinburgh 146. Compared with the rates of the previous month, those of Glasgow, Edinburgh, Paisley, and Leith are less, but those of Dundee, Aberdeen, Greenock, and Perth are more.

Deaths from the principal epidemic diseases numbered 418, which is equivalent to an annual death-rate from these causes of 2·9 per thousand, a rate which is 0·9 lower than that of January, but 0·4 higher than that of February of last year. These deaths are 172 fewer than in January, but 77 more than in February of last year. The death-rate from these causes ranged from 4·2 in Glasgow to 1·1 in Edinburgh. In Leith it was 3·4; in Greenock 3·0; in Dundee 1·9; in Paisley 1·8; in Perth 1·8; and in Aberdeen 1·2.

Deaths from small-pox during the month numbered 3; they were all registered in Leith. Deaths from measles numbered 202; they were 157 fewer than in January. Of them 175 were registered in Glasgow, which is 123 fewer than the number registered in that town in January. Deaths from scarlet fever numbered 22; they are 4 more than in the previous month. Deaths from whooping-cough numbered 98, which is 18 fewer than in January. Deaths from enteric fever numbered 14; from diarrhœa and dysentery 17; and from cerebro-spinal meningitis 33, of which 22 were in Glasgow, 4 in Edinburgh, 3 in Paisley, 2 in Leith, and 1 each in Dundee and Aberdeen.

Deaths from diarrhœal diseases, including those registered as due to diarrhœa, dysentery, infective enteritis, and gastro-enteritis numbered 54; they are 11 fewer than in the previous month, but 5 more than in February of last year. Deaths from influenza numbered 31; from puerperal septic conditions 8; from malignant disease 158, of which 87 were ascribed to carcinoma, 14 to sarcoma, and 57 to

Digitized by Google

other forms of cancer or to cancer not otherwise specified. Deaths from heart disease numbered 269; from apoplexies 167; from premature birth debility 89; and from alcoholism 4. Deaths from pneumonia numbered 411, and amounted to 13·2 per cent. of the total deaths; they are 2 fewer than in January, but 88 more than in February of last year. Deaths from bronchitis numbered 272, and amounted to 8·7 per cent. of the total deaths; they are 122 fewer than in January, and 40 fewer than in February of last year.

Deaths registered as due to tuberculous disease numbered 370, of them 227 being ascribed to phthisis. The deaths from tuberculosis were 7 fewer than in January, but 4 more than in February of last year; they amounted to 11·9 per cent. of the total deaths. The deaths from phthisis were 23 fewer than in January, 4 fewer than in February of last year, and amounted to 7·3 per cent. of the total deaths registered during the month.

Deaths ascribed to violent causes numbered 109. Of them 10 were suicidal, 7 being by hanging, 2 by cutting, and 1 by drowning.

The deaths registered during the month include those of 2 males and 12 females aged 90 years and over, the oldest of them being a female fundholder, aged 99.

Obituary.

A. HALLIDAY DOUGLAS, M.D., F.R.C.P.

WHEN one recalls the fact that of the hundred and eleven graduates in Medicine of Edinburgh University in the year 1840 the name of Andrew Halliday Douglas alone remains on the Medical Register of 1907, and that the years of his principal work began with his appointment as physician to the Infirmary in 1843, and now lie nearly half a century in the past, it may be readily understood that there are few now living who can remember or appreciate the position he held in the profession in Edinburgh in the early Victorian Era.

He was descended from an old Dumfriesshire branch of the family of Douglas, and the son of an Edinburgh Writer to the Signet. Born on March 17, 1819, he would, had he lived one week longer, have attained his ninetieth year. He entered the High School of Edinburgh when nine years of age, and was one of those who, in 1828, walked in procession from the High School Yards to the new building on the Calton Hill.

In November 1835 he matriculated as a student of the University of Edinburgh, and when he took his degree of Doctor of Medicine, in

Digitized by Google

The late Dr. Halliday Douglas.

In 1850, when Physician to the Royal Infirmary.

In 1888.

Digitized by Google

Digitized by Google

1840, wrote a thesis on "Bronchotomy in Croup." Before qualifying he obtained, in 1839, the appointment of Resident Clerk in the Royal Infirmary, and filled this position during three years, first in the Physicians' then in the Surgeons' department, his chiefs being Dr. P. D. Handyside, Dr. Henderson and Mr. Robertson.

After leaving the residency in the Infirmary he devoted himself to preparation for his work as a physician; he became a member of the staff of the North-Western Dispensary in 1842, and of the New Town Dispensary in 1843. In 1843 he was appointed Ordinary Physician to the Infirmary at the early age of twenty-four, and in the same year became a Fellow of the Royal College of Physicians.

The succeeding ten years formed a period of his life to which he always looked back with the keenest pleasure. In his hospital work he was intensely interested, spending many hours daily in the wards. During five sessions he delivered the Clinical Lectures on Medicine recognised by the Public Medical Boards, and he also delivered several special courses of clinical lectures on Diseases of the Chest, which were well attended. This course of special instruction was not compulsory, but was much appreciated by the students of that period on account of the thoroughness of the tuition given on the auscultation of the chest.

Dr. Douglas specially devoted his attention to diseases of the heart and respiratory system, and investigated and advocated the action of digitalis. He wrote pamphlets dealing with interesting cardiac conditions, but never published his views in a more complete and systematic work.

Although he did not succeed in obtaining the position to which he aspired, of Professor of Practice of Physic, first in Glasgow in the year 1852, and later in Edinburgh in the year 1855, yet it may confidently be said that, by his enthusiasm for the teaching of medicine, and by the accuracy and thoroughness of his work in the Infirmary, he had a large share in maintaining and enhancing the reputation for clinical teaching of the Edinburgh School. There is ample testimony, both from his colleagues and his students, that this was so, and the managers of the Infirmary placed it on record in their minutes[1] that "by his zeal and energy not less than by his professional acquirements he has contributed largely to sustain and extend the reputation of the Infirmary as a school of practical instruction in medicine."

When his connection with the Infirmary ceased on the expiry of his statutory ten-years' appointment (five years' extension not being in those days granted) he continued during many years to enjoy a

[1] May 24, 1852.

Digitized by Google

high reputation as a consultant in chest cases, and also devoted himself to private practice.

In the year 1863 he was appointed Physician to the Chalmers's Hospital for Sick and Hurt, which was opened in 1864, Professor Miller being his surgical colleague. This appointment he held until 1887.

In 1858 the Postmaster-General resolved to appoint a Medical Officer to the General Post Office in Edinburgh, and Dr. Douglas was offered and accepted the post, which he held until the year 1897. During these years he had many evidences that his kindliness of nature and devotion to the interest of the patients were much appreciated by the Post Office staff, and by his private patients he was greatly beloved.

His interest in the prosperity of his College was always very great. During his connection with it more than one stormy period was passed through when its relations with the University were not so friendly as happily they now are, and in all these times of stress and difficulty he was a staunch supporter of the interests of the College. He held the office of Treasurer during the years 1856-63, and in 1869 was elected President of the College. In 1867 he was elected Vice-President of the Medico-Chirurgical Society.

He took much interest in the welfare of the Edinburgh Medical Missionary Society, of which he became a director in the year 1848, a few years after the foundation of the Society. In 1887 he was appointed one of its vice-presidents, and took every opportunity of advancing its interests, and showing kindness to the students connected with it. Amongst his closest friendships were those he formed with fellow-directors of this Society.

Without entering much into the convivial life of the profession he yet made many warm friendships. One of his earliest friends in the profession was Dr. James Duncan; and for Dr. Sharpey, the anatomist, who showed him great kindness, and Dr. Alison he retained through life a grateful remembrance. In 1866, when President of the Harveian Society, he made the character of Alison the subject of his discourse. P. D. Handyside, Richard Mackenzie, John Burt and Hugh Cleghorn were names often on his lips—all of them intimate friends' of whom he retained the liveliest recollections, as also of his fellow-graduate, Philip Maclagan. His fondness for music, especially part-singing, brought him into touch with kindred spirits in the profession, and when the College of Physicians was a small body, and music at its annual banquet was provided by the Fellows themselves, he frequently joined in part-songs, together with Sir Robert Christison, Sir Douglas Maclagan and Dr. Peddie.

Digitized by Google

Possessed of great strength of character, together with the most perfect simplicity and straightforwardness, quick and decided in judgment, he urged any view he was led to form strenuously and, it may be, at times with too little appreciation of the standpoint of those who differed from him, but there was always recognisable in him a generosity of nature, the fulness of which was known to those who were intimate with him, and with all his seriousness he was full of geniality and humour. Of strong constitution and physique, he was in early life fond of outdoor recreation and sport; although more than once dangerously ill he reached the age of seventy with unimpaired health, but in 1890 he had an attack of influenza, and for some years thereafter his health was in a precarious state, compelling him to spend several winters abroad and to live much in the country.

He gave up practice some fifteen years before his death, but during the last ten years of life his health was fully re-established, and till November 1907, when his last illness (cerebral thrombosis) began, he was vigorous and in full possession of all his faculties. He could recount many memories and stories of an almost forgotten past, and it is regrettable that this has with his removal been lost to those who liked to visit him and hear from him of Edinburgh and its people sixty and seventy years ago.

He is survived by four sons and a daughter.

Meetings of Societies.

Edinburgh Medico-Chirurgical Society.

THE sixth meeting of the session was held on 4th March, Dr. James Ritchie, President, in the chair.

Mr. Alexis Thomson showed a boy, aged 16, who was unable to extend the elbow completely as a result of a slight displacement forward of the epiphysis of the olecranon.

Mr. George Chiene showed two patients after operations for perforated gastric ulcer. The abdominal wall had been completely closed at the operation, and primary union occurred in both cases.

Dr. F. M. Graham showed a photograph and skiagrams of a case of absence of both forearms.

Mr. Alexis Thomson read a paper on "Diverticula of the Ileum resulting from Tuberculosis and Accessory Pancreas." He showed that acquired diverticula might result from anything impairing the integrity of the muscular coat. In many cases tuberculosis invaded

Digitized by Google

and weakened the circular muscle fibres, and in some cases an accessory pancreas might be in a similar situation and cause the formation of a diverticulum. Some care was required to distinguish acquired diverticula from Meckel's diverticulum. A Meckel's diverticulum was solitary, was usually opposite the mesenteric attachment of the bowel, was possessed of a mesentery, was structurally composed of normal intestine, or if disease were present, that disease was secondary and not causal.

Dr. A. Walker read a paper on the "Provision of Sanatoria for the Treatment of Curative Cases of Phthisis among the Poorer Classes." He stated that sanatoria had, in the first instance, been established for the wealthy classes, and that these expensive institutions had been copied too slavishly. The cost of buildings could be greatly reduced. Asylums cost about ten shillings per patient per week. Of this, four shillings were expended in food. The food allowance might be raised to ten shillings in a sanatorium, and still leave the weekly cost at sixteen shillings. Dr. Walker wished to emphasise that phthisis was curable, and that sanatorium treatment was the best method; that sanatoria should be available for the poor (as well as the pauper); that they should be provided not by the State but by the charitable contributions of all classes, including the poor, and that by economical management they should evoke public confidence and support.

Dr. Lawson said that if phthisis was to be cured it must be treated early. That could only be effected in two ways—either by compulsory notification with its corollary, sanatorium treatment, or by making it to the interest of the working man to submit to early treatment.

The latter course could be carried out, as in Germany, by a system of compulsory insurance with powers to treat infected individuals, and to maintain their homes.

Mr. L. C. Peel Ritchie read a paper entitled "Observations on the Use of Inoculations of Bacterial Suspensions."

In localised infections inoculation produced and increased the quantity of specific anti-bacterial substances in the circulating blood. The local lesion was benefited in direct proportion as the plasma reached the organisms and destroyed them, or prepared them for phagocytosis. A marked positive chemiotaxis was induced, and suppuration might be augmented for a time, and might terminate more rapidly. After inoculation the pus contained more intra-cellular and fewer extra-cellular organisms.

In chronic cases, such as tubercle, where the bacteria might have been cut off from blood and lymph, inoculation might prevent extension.

Digitized by Google

After an inoculation a rise in the phagocytic index occurred within 24 hours, usually reaching its climax in 6 hours. The phagocytic index as a guide demonstrated how small a dose of a suspension was necessary to produce an immunising effect, and that frequent inoculations were unnecessary.

The dosage should be regulated by the weight and not by the numbers of bacteria in a suspension.

Great benefit had followed the use of vaccines of streptococci and staphylococci, and it was unnecessary to make these from the strain of organism infecting the patient.

In cases of advanced surgical tuberculosis the prophylactic use of tuberculin was advisable before operation.

The prophylactic administration of a streptococcic and staphylococcic vaccine before operations was strongly advocated. B. coli might be added if the operation were near a mucous tract. If this method were adopted chemical antiseptics were not to be applied to the tissues, as they inhibited phagocytosis.

Dr. Lawson agreed with Dr. Peel Ritchie's findings regarding the intervals between inoculations. These intervals should be gradually prolonged as the positive phase tended to become longer.

Dr. James Ritchie, Superintendent of the Laboratory of the Royal College of Physicians, said that nothing was known regarding the methods of infection of organism. Certain results followed the injection of these organisms, but such terms as "barriers of defence" were really meaningless. Toxins had probably nothing to do with the development of immunity. As regards inoculation, Dr. Peel Ritchie's personal findings were of very great value.

Mr. Cathcart said he had been astonished at the benefit following tuberculin in tuberculous glands. He had been disappointed with the results of inoculation in cases of streptococcic infection with œdema.

A special meeting was held on 18th March, Dr. James Ritchie, President, in the chair.

Lieut.-Colonel W. B. Bannerman read a paper on "Recent Researches into the Etiology of Plague in India." He said that the present plague epidemic began in 1896, although prior to that sporadic cases had occurred in the Himalayas. There were two types of the disease—pneumonic, which was very contagious from one person to another, and bubonic, which was not communicable from one person to another. Evidence had accumulated to show that the disease was spread by rats. Thus it had been noted that rats became ill when plague was prevalent, and that the epizootic preceded the epidemic. House to house infec-

Digitized by Google

tion readily occurred, although caste or other conditions prevented any personal contact of the inhabitants.

The chief offender was the black rat, which lived in the native houses; but the brown rat, which was a sewer rat, was also affected, as well as a third variety which was found in India.

Clothing, &c., sent to a distance might carry infection, and this was accounted for by the rat-fleas sent with them.

The rat-flea, pulex cheopis, would bite other animals and man in the absence of rats. In plague-infested places guinea-pigs could be used to trap rat-fleas.

Numerous experiments were recorded which went to prove the *rôle* of fleas in transmitting the disease, and to exclude the possibility of contamination of food or floors by rats being a means of spreading the disease. The conclusions reached were as follows:—

1. Pneumonic plague is highly contagious, but being rare (less than 3 per cent. of all cases) plays a very small part in the spread of the disease.

2. Bubonic plague in man is not infectious, and is entirely dependent on the disease in the rat.

3. The infection is conveyed from rat to rat, and from rat to man, solely by means of the rat-flea.

4. A large majority of plague cases occur singly in houses, but when more than one case takes place in a room the attacks are usually nearly simultaneous.

5. Plague is usually conveyed from place to place by rat-fleas brought by people in their baggage or on their persons.

Several interesting photographs illustrating the conditions of native life and the experiments were shown by the lantern.

Sir Thomas Fraser congratulated Colonel Bannerman and the Indian Medical Service on the scientific work which they had done. When he visited India it was in many places impossible to get a microscope suited for bacteriological work, and he claimed that the Commission over which he had presided had at least succeeded in stimulating the Government to supply equipment for scientific work. The first Plague Commission had been sent to collect and focus all that was then known of the disease, and to suggest means of limiting it. At that time after the Commission returned they could not get evidence as to whether the rat-flea would bite human beings. He would like to know what was to be done to limit the enormous prevalence of the disease. The human population of India was 300,000,000. It would be impossible to imagine the rat population and the flea population. The difficulties of dealing with rats or fleas would be insuperable. Their great numbers were due to the appalling insanitary conditions.

Digitized by Google

The worst slums of Edinburgh, Glasgow or London were palaces compared to some of the Indian native dwellings. The reform of the sanitary system seemed to be the only hopeful line. Improved sanitary conditions might not only diminish the incidence of the disease, but would reduce the case mortality from 75–95 per cent. to the figure it reached when Europeans were affected—20 to 23 per cent.

In the Glasgow epidemic several cases had occurred before the sanitary authority became aware of them, yet in the worst slums the case mortality was only about 20 per cent., and the epidemic was easily stamped out, although the rat epidemic persisted for eighteen months after the last human case had occurred.

Sir Alexander Simpson said he had had an opportunity a year ago of seeing Colonel Bannerman's laboratory. He admired the work, and admired the courage of the men who carried it on. The Indian Medical Service offered a splendid field for scientific work. One advantage of the present investigations was that it had put an end to unnecessary expenditure on unnecessary disinfection which allowed fleas to flourish.

Colonel Bannerman, replying to discussion, said that it was hopeless to attempt to get rid of the rats or fleas, and attempts to improve matters by model dwellings had failed owing to the habits of the people. The only means of checking plague now available were the removal of the people from infected centres, or the use of Haffkine's prophylactic. Sanitary improvements would fail until the people had been educated in primary sanitation, and that education must begin in the schools.

Major D. G. Marshall and Dr. Gulland gave a communication on a case of Kala-Azar. The patient was a young medical man who had suffered from various attacks of fever in the Southern Soudan in June. He was seen on 18th July when the temperature was 105° F. Quinine was given without effect. No malarial parasites were found, and the leucocytes numbered only 4000 per c.mm. The spleen was slightly enlarged. The Widal reaction was at first positive, but at later examinations it was negative. In October the spleen enlarged very rapidly. Leucocytes fell to 938 per c.mm. Temperature kept high and irregular. Diarrhœa eventually supervened, and death occurred on 13th November. A small number of Leishman-Donovan bodies were found in the spleen on post-mortem examination.

Edinburgh Obstetrical Society.

THE fifth meeting of the sixty-ninth session was held on Wednesday, 11th March, the President, Professor Stephenson, in the chair. After

Digitized by Google

the reading of the minutes of last meeting, and the election of three Ordinary Fellows, Dr. James Lochhead read to the Society his communication on "The Transmission of Nitrogenous Compounds from Mother to Fœtus." Dr. Lochhead first drew attention to the relatively great increase of the nitrogenous compounds of the fœtus during intra-uterine life. He then went on to consider the part played by the placenta in the transmission of serum proteids from mother to fœtus. Dr. Lochhead having touched on the prevailing theory that the placenta acts like the intestine in extra-uterine life, proceeded to show objections to the retention of such a theory. Experimental work, he said, demonstrated (1) the absence of altered proteids, such as albumoses and peptones, in the freshly obtained placenta of the sheep. (2) The absence of any extra-cellular proteolytic ferment. Dr. Lochhead gave the results of some experiments in which egg albumen, put into the abdominal cavity of the pregnant rabbit, was found not only in the maternal, but also in the fœtal, serum. Ox serum, however, which more closely resembles the normal serum, was not found to be transmitted to the fœtus. Dr. Lochhead expressed the opinion that normal serum proteids did not pass as such directly across the placenta, but that while in the placenta they were transformed and elaborated into products necessary for the growth of the fœtal tissues.

The President expressed to Dr. Lochhead the Society's appreciation of the valuable original work he had carried out in relation to the questions connected with placental activity. Dr. W. E. Fothergill then proceeded to lay before the Society his views on "The Modern Operative Treatment of Downward and Backward Displacements of the Pelvic Viscera." Dr. Fothergill first took up in detail the consideration of the present teaching as to the factors concerned in the support of the uterus. From clinical knowledge obtained in performing abdominal section he was of opinion that the round and broad ligaments were of no value in supporting the uterus. The round ligament, he argued, was a mere vestigial structure, of no value in post-natal life, its function being merely to pull down the ovary and uterus in early fœtal life. The broad ligament he regarded as simply a meso-salpinx, while the utero-sacral ligaments were merely peritoneal folds. Dr. Fothergill expressed the opinion that the perineal muscles were of little value in supporting the viscera; clinical evidence supporting this view was found in the fact that, while in some cases of prolapse the perineum was intact, there were, on the other hand, cases of complete rupture of the perineum, in which there was no prolapse.

Again, Dr. Fothergill maintained that the funnel shape of the so-called pelvic diaphragm would militate against its being of any value as a support. Dr. Fothergill was of opinion that the true support

Digitized by Google

of the viscera was derived from the blood-vessels and their sheaths, along with the ureters and lymphatics which form masses of tissue extending from the side wall of the pelvis to the lateral aspects of the viscera. Relaxation of this tissue he regarded as the one constant and essential factor in the causation of prolapse of the pelvic viscera. Relaxation of the upper part of this tissue, plus some force pushing the uterus back, would cause retroversion. Dr. Fothergill, in discussing the operative treatment of prolapse, said that, as a logical result of holding this view as to the etiology, he advised and made use of anterior colporrhaphy, so modified as to admit of union, in the mid-line in front of the cervix of this parametric and paravaginal connective tissue.

Sir Halliday Croom said that he agreed with Dr. Fothergill in his views as to the relative uselessness of the round and broad ligaments as uterine supports.

Sir Alexander Simpson referred to Parson's method of stiffening the parametric connective tissue. He pointed out that it was no explanation of the phenomena of prolapse to say simply that it was due to the loosening of perivascular connective tissue. What, he asked Dr. Fothergill, was the cause of this loosening? He offered, as an explanation of the absence of prolapse in some cases of rupture of the perineum, the fact that in such cases the uterus might be braced up in good position by cellulitis in the bases of the broad ligaments.

Dr. Ranken Lyle said that his clinical experience coincided with Dr. Fothergill's in regard to the occurrence of rupture of the perineum without prolapse, and *vice-versâ*. He was of opinion that, clinically, patients fall into two classes. In the one the lax tissues stretched, but did not tear, and were so devoid of tone and elasticity that they never again properly retracted. In the second class we had patients whose tissues were resiliant and elastic, they did not stretch easily, but tended rather to tear, but even when torn their elasticity and tonicity were such that they were able to retain the viscera in good position, and so to prevent prolapse.

Dr. Barbour reviewed Dr. Fothergill's position, and said that he could not see why the fascia round the vessels should be regarded as so important, while Dr. Fothergill refused to admit the importance of the fascial layers in relation to the muscles of the pelvic floor. Dr. Barbour said all those who had performed vaginal hysterectomy must agree that the utero-sacral ligaments were of great importance in retaining the uterus *in situ*.

The chairman closed the discussion, and Dr. Fothergill replied.

Dr. Barbour then read his paper on "The Frozen Sections by Bumm and Blumreich, and by Zangemeister—Is there a Lower Uterine Segment?" (page 294).

Digitized by Google

After several Fellows had spoken on this paper, Sir Halliday Croom showed three specimens—(1) An ovarian fibroid; (2) Uterine fibroid removed from a patient, æt. 19; (3) Hydrocephalic fœtus, delivered head last by catheterisation of the spinal canal.

Glasgow Medico-Chirurgical Society.

TWELFTH MEETING, March 6, 1908; Dr. Walker Downie, President, in the chair.

Dr. C. O. Hawthorne, London, read a paper on "The Occurrence of Cerebral and Ocular Complications in Cases of Anæmia, and the Probable Relationship of these to Thrombosis." There was a large attendance of members attracted both by the reputation of the speaker and by his former association with Glasgow as a teacher. The aim of the paper was to prove that certain cerebral and ocular phenomena, both of a grave and fatal nature, and of a nature less severe and transient, occurring in the course of simple chlorotic anæmia, are due to thrombosis in the venous channels within the skull.

It is a matter of common knowledge that thrombosis of the femoral veins is not an infrequent complication of anæmia, of simple chlorosis, as well of that due to severe hæmorrhage. Less frequently are the iliac veins involved, and still less frequently those of the upper extremity. The occurrence of thrombosis, however, gives one reason to suppose that the same thing may happen within the cranial cavity, and this is substantiated by the results of post-mortem examination of chlorotic patients who have developed severe cerebral symptoms, vomiting, paralysis, double optic neuritis, and in whom the diagnosis of tumour or meningitis has not met with subsequent confirmation. It is not difficult then to accept intra-cranial thrombosis as the cause of these severe and fatal symptoms. In less grave and non-fatal cases the same probable cause is sometimes suggested by the later appearance of thrombosis in the jugular and other veins. In a third class of case the only phenomena referable to intra-cranial complication are double optic neuritis and ocular paralysis. In this connection Dr. Hawthorne quoted two cases. In both there was double optic neuritis and external rectus paralysis, and in both the neuritis and the paralysis recovered after some weeks. The fact of this recovery is no argument against the thrombotic theory, for the complete removal of the clot in the femoral is a common observation, and, moreover, in cases of sinus thrombosis due to middle ear suppuration it has been found that in those cases in which the patient has recovered after operation on the sinus the accompanying severe optic neuritis has, in some at any rate, passed off.

Digitized by Google

The speaker could not accept the suggestion that these cases of optic neuritis were due to syphilis, plumbism or other toxic influence. The severe nature of the neuritis was against this, as was also the history of the cases and their satisfactory course under treatment by iron. Nor could they be ascribed, as Sir William Gowers thinks, to eye-strain from hypermetropia. This would not account for the one-sided ocular paralysis. Dr. Hawthorne then went on to speak of cases less common, in which changes in the field of vision occurred in the course of anæmia, and for these he contended that intra-cranial thrombosis supplied a reasonable explanation of their cause. Taking all the four classes, the only hypothesis which was capable of explaining them all was the occurrence of thrombosis in the sinuses or veins within the skull. How this actually causes the optic neuritis or the ocular paralysis is a matter of some speculation, though, with regard to the latter, the anatomical relations of the sixth nerve afford a sufficient explanation of its relative frequency. On the motion of Dr. Middleton, seconded by Dr. Lindsay Steven and supported by Dr. Renton, the cordial thanks of the Society were given to Dr. Hawthorne for his most interesting and well-reasoned communication.

Thirteenth meeting, March 13, 1908; Dr. Walker Downie, President, in the chair. The attendance was rather meagre.

1. Dr. W. B. Inglis Pollock showed a patient with telangiectasis of the retinal capillaries and venous radicles. Similar vascular conditions were not present in other parts of the body so far as could be observed. The eye condition is very rare, and is by some considered hæmorrhagic rather than telangiectatic, which was the position taken by Dr. Thomson, who spoke on the case.

2. Dr. Kerr Love described a case of aural tuberculosis in an infant in which, after cure of the disease in the temporal bone and in the glands of the neck, death occurred from a tuberculous tumour of the pons, associated with meningitis. Whether the aural and brain conditions had a causal relation with one another, and if so, which was primary, it was difficult to determine, and on account of the age of the patient no help could be obtained by tuning fork or other tests to decide in what order the internal and middle ears became involved. Dr. Love looked upon the middle ear disease as the primary focus. The brain was shown and demonstrated by Dr. Leitch.

3. Dr. Walker Downie showed stereo-photographs of a patient before and after operation for a very large fibro-cellular tumour of the nose, the so-called lipoma-nasi. The improvement in the man's appearance was very decided.

4. Dr. John Rowan showed a number of photographs prepared by

Digitized by Google

the new—Lumière—colour process to illustrate certain external diseases of the eye. The result was very satisfactory, and the opinion was generally expressed that this process would be of much value in depicting certain pathological conditions, and for teaching purposes.

5. Dr. Carl H. Bronwing gave a short and very interesting account of some experiments he had conducted, chiefly in Erlich's laboratory at Frankfurt, on the treatment of trypanosome diseases by means of drugs. Atoxyl owes its value chiefly to the arsenic it contains. Certain of its derivatives are less toxic and more effective. This is the case with acetyl-atoxyl. Two other classes of drug were also shown to be of great value in the treatment of these diseases in the mouse and in the horse, trypan-blue being the type of one, and para-fuchsin of the other, and the addition of these to acetyl-atoxyl increased its effectiveness but not its toxicity. Unfortunately, after treating mice with any of these drugs for a long period, it has happened in some cases that the disease has recurred and a strain of trypanosome has been got which is resistant to the particular drug used. Acetyl-atoxyl cured all the cases of trypanosome infection in mice when given within one day after inoculation.

Referring to the treatment of sleeping-sickness, Dr. Bronwing said, until by experimentation on monkeys—man naturally not being available for the purpose—we could determine what was the most powerful derivative of atoxyl for the purpose, there followed these two rules as the result of these researches. Attack the disease as early as possible, and use all the three drugs he had mentioned in maximum doses.

Glasgow Northern Medical Society.

MARCH 3, 1908; Dr. Todd, President, in the chair.

Dr. Stockman contributed an interesting communication on the value of some new drugs. From the number of advertisements we receive it might be thought that their name is legion, but in reality the number of really new drugs, and not merely new preparations or derivatives, is very small, even if we include a long period of years. Manufacturing chemists, especially on the Continent, who have large staffs of trained experimenters, send out practically endless therapeutic products, few of which survive. Sometimes they take the result of the work of some scientific worker, make some small change in it and give it to the medical world as their own, with the usual advertisement, thus robbing the original discoverer of his due. Another disagreeable point is the way in which some chemists dictate methods of treatment to the profession. There ought

Digitized by Google

to be some means of preventing the indiscriminate use of drugs and new dietetic and other preparations before they have been tested and tried. Dr. Stockman first referred to the drugs which, introduced during the past fifty years, have proved themselves to be valuable therapeutic agents, and mentioned especially cocaine, strophanthus, cascara, antitoxin and adrenalin. It is probable that during the next fifty years still greater additions will be made. He then considered in more detail some of the newer remedies.

Polyvalent Antistreptococcic Serum—Menzers.—This is the best of all the antistreptococcic sera, both on account of its mixture from many strains of human streptococcic infection, and from the fact that in its preparation the cocci are injected directly into the horse, from which the serum is obtained, and not through the rabbit or other animal. Menzer's serum is useful not only in recognised streptococcic infection, but also in sub-acute rheumatism. It should not be used in the acute stage, as it causes reaction in the affected parts, which, should the valves of the heart be involved, might lead to serious results. It is probably antitoxic as well as bactericidal, which is its recognised action.

Moebius's Serum of Thyroidectomised Animals.—This has not given in Dr. Stockman's hands, and the same applies to the milk of goats from which the thyroid has been removed, the beneficial results in exophthalmic goitre which have been claimed for it.

Wright and Bullock's Antistaphylococcic Serum or Vaccine.—In the treatment of staphylococcic infections this has only a limited value. It never leads to an actual cure. Indeed in some cases the disease has recurred with much increased severity. It may be that as the technique of its manufacture is improved it may become more valuable.

Stovaine and other new substitutes for cocaine are not so valuable as the drug itself.

Adrenalin can now be made synthetically. It is sold under many different names. Apart from its value in preventing hæmorrhage from mucous surfaces during operations, *e.g.* on the nose or the throat, it is useful in arresting hæmorrhage when given subcutaneously, or, better still, intra-venously. In hæmatemesis it acts when given by the mouth and when the hæmorrhage is arterial and not venous, and it is of great service when applied to piles. Dr. Stockman has also used it with good results in 6-minim doses subcutaneously to arrest attacks of spasmodic asthma.

Thiosinamine and its Derivative, Fibrolysin.—This has given satisfactory results in the removal of new-formed connective tissue, as

Digitized by Google

in palmar contraction, non-malignant structure of the œsophagus, urethral stricture and so on.

Extract of Pituitary Body.—As produced by Professor Schäfer, this is the most active diuretic known, causing, as it does, increase of blood pressure, with, at the same time, dilatation of the renal blood-vessels. No doubt this extract will soon be made synthetically, as is adrenalin.

Purgatives.—Dr. Stockman made some general references to some new drugs containing the active principles of certain purgative substances. In the crude state these active principles are combined with insoluble resins, so that in their passage through the bowel they are only slowly absorbed, and so act upon the intestines more or less in their entirety. When given in the form of the active ingredient alone, removed from the resin, being soluble, they are readily absorbed in the upper part of the small intestine and hence only part of the bowel is acted on. Moreover, remote disagreeable effects may follow the rapid absorption of such active ingredients.

Formanint has proved itself useful as a pleasant throat antiseptic by reason of the formaldehyde which is liberated in the mouth.

Aberdeen Medico-Chirurgical Society.

A MEETING of this Society was held on the 20th of February, Dr. George Williamson, the President, in the chair.

Dr. A. W. Mackintosh exhibited a case of narcolepsy. The patient was a man 41 years of age, by occupation a carter. Since May 1907 he had suffered from continual desire to sleep. The attacks of sleep come on suddenly and last for a few minutes. He falls asleep when driving or at meals. The sleep is apparently quite natural, and the patient can be roused from it quite easily by touching him, and sometimes merely by speaking to him. The attack is sometimes preceded by a "heavy feeling" at the back of the head. He is nervous and irritable, and his knee-jerks are hypersensitive, but otherwise nothing further can be made out. There is a history of syphilis 20 years previously, and of alcoholism some years back, but not recently. From the lightness of the sleep Dr. Mackintosh does not consider these attacks to be of an epileptic nature. He suggested that they might be the precursor of syphilitic brain changes.

Dr. Mackenzie quoted a somewhat similar case in a schoolboy, aged 19 years, who was admitted to an asylum owing to the development of mental changes and hallucinations of hearing. For 18 months previous to admission he had exhibited marked attacks of a narcoleptic character.

Digitized by Google

Dr. Galloway described five cases of serious visual deficiency affecting responsible employees in the marine and railway services. Two of his cases were engine-drivers—one suffering from compound myopic astigmatism, and the other from hyper-metropia. The remaining cases were trawl fishermen, all of whom had taken an active part in the navigation of vessels. The first of these, who showed myopic astigmatism with vision (both eyes) $\frac{6}{60}$, had acted as the mate of a trawler. The other two cases were completely colour blind.

Dr. John Innes read notes of a case of atonic dilatation of the stomach, which was successfully treated by lavage.

Dr. Kelly gave the history of a case showing unusual manifestations of lues. The patient was a house painter who was in the habit of holding his paint brushes between his lips. He developed a circinate and depressed ulcer of the right side of the pharynx, which appeared to be the primary syphilitic lesion. This was followed by the appearance upon the face and extensor aspects of both thighs and legs of an eruption, at first papular, later molluscoid or framboesia-like. As the patient exhibited a very marked idiosyncrasy towards both mercury and iodides, the skin lesions were scraped. They healed rapidly, leaving white scars. Several months later the old scars broke out again, forming painful serpiginous ulcers covered with lichen-like crusts. These were scraped, with a successful result, and the patient is at present in excellent health.

Forfarshire Medical Association.

A MEETING of this Society was held in the School of Medicine, Dundee, on Thursday, 5th March, at 8·30 P.M. Professor Kynoch in the chair.

Dr. Kerr showed a man, aged 36, who, as the result of a fall on to a concrete floor, received injuries to his skull causing a fissured fracture of the parietal bone on the left side, which passed down to the middle fossa of the base. After four weeks he had apparently recovered, but since then had recurrent attacks of aphasia with paresis of the right arm and leg, and considerable disturbance of mental functions. He also had paralysis of the external rectus muscle of the right eye, the sixth nerve being involved in the fracture of the base, and had probably suffered from some cerebral laceration in the neighbourhood of the fissure of Rolando and Broca's convolution.

Dr. Mitchell showed a young man after inter-scapulothoracic amputation of the left arm for sarcoma of the humerus following a severe injury to the hand. Six months had elapsed since the operation and the patient remained well.

Digitized by Google

Dr. G. Miller showed a man with well-marked herpes involving all the superficial branches of the cervical plexus on the right side.

Professor Kynoch showed specimens of a large fibroid tumour with torsion of the pedicle; a fibroid with prolapse of the whole uterus; a rare condition of fibroid of the cervix; a fibroid with advanced calcareous degeneration; a parovarian cyst; and a case of cancer of the body of the uterus.

Professor Kynoch then read notes on a case of pregnancy complicated with cancer of the rectum. He gave a general account of the literature of the subject, and an analysis of thirty cases which had been reported. The cases might be divided, he said, into three groups: 1st, Those not recognised until after the confinement; 2nd, Inoperable cases diagnosed during pregnancy; 3rd, Cases also diagnosed during pregnancy, but which were operable. As a result of his investigation he found that in only one case where the cancer was removed had pregnancy gone on to full time. In any case the condition was not unsatisfactory, and if the death of the patient appeared to be imminent the only method of treatment, as far as the child was concerned, was Cæsarean section, or induction of premature labour. If the growth was small it should be removed without delay, but it was best to induce labour before attempting operation for removal, as then the risks of septic infection of the uterus were lessened.

He then described his case, which occurred in a primipara, aged 21. She was first seen in the sixth month; for 7 weeks she had been losing flesh rapidly, and was troubled with constant diarrhœa. On examination, a large warty growth (which on microscopic examination proved to be colloid cancer) was found in the rectum, involving the sphincter, occluding the bowel and causing narrowing of the vaginal canal. Removal was impossible, and as the patient refused to have Cæsarean section, it was thought best, as she was going downhill very rapidly, to induce premature labour. This was attempted at the seventh month, but delivery was very difficult; forceps had to be used, and this caused laceration of the weakened vaginal septum. The child was dead, and the mother only lived for 13 days after the operation.

Drs. Don and Buist mentioned a case they had under treatment lately of cancer of the rectum in a pregnant woman, aged 34. The growth was limited, and it was excised, but abortion took place shortly afterwards. Dr. Buist considered that in severe cases Cæsarean section was best.

Dr. Don read notes on two cases which he considered to be Henoch's purpura, associated with angio-neurotic œdema. The first was a boy of 11 years, where the purpuric rash was mostly on the extremities. Vomiting and abdominal pain with constipation occurred, and localised

Digitized by Google

patches of pale œdema continued to appear during the course of the illness. The second case was also in a boy of 11, where the hæmorrhages from the nose and bowel were more severe and abdominal pains milder. The œdema appeared at different dates on almost all regions of the body. He discussed the pathology, and the probability of the conditions being due to a toxæmic, the toxins being manufactured by organisms in the colon was put forward, while the most suitable treatment suggested was by intestinal antiseptics.

Professor Stalker pointed out that the name Henoch could not very well be applied to Dr. Don's cases, as the periodic recurrence of the symptoms of colic, vomiting and purpura, with intervals of comparative health, which was the most characteristic feature of the disease as described by Henoch, were absent in these two cases, which rather consisted of long continuation of the symptoms. How far the angio-neurotic œdema had modified the disease he was not prepared to say.

Mr. Greig thought that the presence of the angio-neurotic œdema pointed to the condition being rather one of hæmophilia, and instanced a case he had with like symptoms. He agreed that the name Henoch should not be applied to Dr. Don's cases.

Professor Kynoch mentioned a case of Henoch's purpura he had met with, in which the periodic recurrence was most marked.

Dr. Don in reply said that he did not consider that this periodic recurrence was necessary, as cases had been reported in which it was absent.

Mr. Greig read notes on a case of Henoch's purpura simulating intussusception, which appear on page 302.

Recent Literature.

CRITICAL SUMMARIES AND ABSTRACTS.

MEDICINE.

By W. T. RITCHIE, M.D., F.R.C.P.,
Assistant (Clinical) Pathologist, Edinburgh Royal Infirmary.

The Nature and Treatment of the Secretory Disorders of the Stomach.

Any fresh contribution to the pathology of the disturbances of gastric secretion is exceedingly welcome, because our treatment of

Digitized by Google

patients suffering from such secretory disorders must of necessity be influenced in large measure by our conception of their pathogenesis. In the treatment of these disorders no other remedial measure is of greater value than an appropriate and carefully selected dietary. While befitting the particular affection from which the patient suffers, and while meeting the special exigencies of the case, the diet should conform in so far as is possible to the tastes and inclinations of the individual.

Although the truth of these general propositions may be freely granted, it is equally true that in the selection of his patients' dietaries the judgment of many a physician is too often biassed by his own particular fads and caprices, or influenced by those of someone whose opinions, crude and extravagant though they may be, pass current for the moment as scientific truth. Thus many a patient is astonished to find her medical adviser cautioning her against some simple article of food the value and harmlessness of which he had been extolling but a short time previously.

Within the past two years fresh interest has been aroused regarding the pathological and therapeutical aspects of the secretory disorders of the stomach. Even if all the questions which have been restudied have not yet been solved, a ray of light has at any rate been cast upon some of the most obscure problems in gastric pathology.

If the gastric contents, after a test meal, present an unduly large amount of HCl., we assume that this is a condition of hyperchlorhydria brought about by the secretion of a gastric juice in which the percentage of HCl. is too high. Conversely if the acidity of the gastric contents be unduly low, we suppose that the pure or native gastric secretion contains too little HCl. For some years the truth of this belief has been almost universally accepted. But the question now arises whether such a conception of the secretory disorders of the stomach is not to a very large extent an erroneous one. According to the new doctrine, of which Bickel[1] is the foremost exponent, pathological alterations of the gastric secretion are very frequently of a *quantitative* nature, but *qualitative* changes in the composition of the gastric juice are not so common as has been generally believed. Bickel's theories naturally require further study and confirmation, but they are deserving of our closest attention, because they are based upon careful experimental research, and because they stand, it is claimed, the test of practical experience.

According to the new doctrine, the affection known as hyperchlorhydria is one characterised by a gastric juice excessive in quantity but of normal concentration, and the condition should therefore be

[1] *Berliner Klinik*, 1907, Heft 230; *Deutsch. med. Wochenschr.*, 1907, S. 1201.

Digitized by Google

known as hyperchylia or gastric hypersecretion. Leo,[1] in a recent work, adopts the teachings of Bickel, and asserts that in hypochlorhydria the concentration of the gastric juice is always normal, but that the amount of secretion is so small that all the acid, or much of it, is combined with the ingested food, or perchance neutralised by alkaline secretions, such as mucus, saliva, bile, or pancreatic secretion. The condition of hypochlorhydria should, in Leo's opinion, be regarded as one of subsecretion, just as hyperchlorhydria is really a hypersecretion.

Bickel has lately given a short but lucid exposition of his views, which are based mainly upon his own experimental researches and upon those of Pawlow and other workers. He points to the successful results obtainable in cases of hyperchlorhydria and hypochlorhydria, treated according to the principles which he lays down, and he claims that the truth of these principles can be verified in the light of clinical experience.

By experimental observations, similar to those conducted by Pawlow in the dog, Bickel shows that in the human subject the acidity of the pure or native gastric juice is relatively constant, and that the somewhat trivial variations in the acidity of gastric juice flowing from an artificial gastric fistula depend primarily upon the degree of its neutralisation by the alkaline gastric mucus. The striking variations in the volume of gastric juice secreted under different circumstances are readily demonstrated. The amount of the secretion is sensibly affected by the character of the food or by nervous influences, such as anger and fear, and, further, it is dependent upon the amount of water and of chlorine within the tissues and fluids of the body. The richer the latter are in chlorine, the greater is the volume of the gastric secretion, and yet it always contains approximately the same percentage of HCl. Bickel's observations, in short, may be said to indicate that both in physiological and in pathological conditions the glands of the gastric mucous membrane furnish a secretion in which the percentage of acid is remarkably constant. And, further, although the amount of gastric juice secreted by the stomach varies within wide limits, the character of the secretion does not readily tend to deteriorate.

When we proceed to consider the treatment of the secretory disorders of the stomach we find that in nearly all treatises on dietetics the subject is so encumbered with analytical tables and by dry statistical references to purins and proteins, to carbohydrates and calories, that there is a tendency for all sense of perspective to be lost

[1] "Die Salzsäuretherapie auf theoretischer und praktischer Grundlage," Berlin, 1908.

Digitized by Google

in a maze of facts and figures. Moreover, it is not so long since the main interest of gastric hyperacidity and subacidity appeared to centre around the question of the relative values of a carbohydrate diet and a protein one, or, as it is often put, of a farinaceous diet contrasted with one in which meat is the main item. Another vexed question is the relative therapeutic value of acids and of alkalies, and their mode and time of administration, in cases of hyperchlorhydria and of subacidity. Let us see what lessons can be learnt from the writings of Bickel, Strauss and Leo.

Bickel asserts that no drug or therapeutic measure at our command can influence to any appreciable degree the percentage production of HCl. by the gastric glands. By nervous stimuli, drugs, mineral waters and diet we can indeed influence the volume of the gastric juice at a particular moment, but its percentage of acid is relatively unaffected and remains at a constant level. If we desire to restore to a fluid within the stomach its proper amount of HCl. we must accordingly modify the volume of the gastric secretion. If a stomach is secreting a normal amount of a subacid gastric juice, we can raise the percentage of HCl. in the gastric contents (gastric juice, food, &c.) by increasing the volume of gastric juice. Similarly when a gastric juice has been rendered subacid by admixture with mucus, or with an inflammatory transudate, the gastric contents can be rendered more acid by increasing the flow of gastric secretion. The symptomatic treatment of gastric hypochlorhydria, however, does not consist merely in attempts to increase the amount of gastric juice. In acute gastric catarrh, for example, we try by various means to remove all stimuli from the mucous membrane of the inflamed viscus, and to give it as much rest as possible.

The volume of the gastric secretion can be most readily influenced by drugs, mineral waters and food, either liquid or solid :—

I. *Drugs.*—Atropin inhibits the gastric secretion. The initial effect of morphia is an inhibitory one, but later the secretion is increased in amount. Pilocarpin and carbonic acid gas have a stimulating action. Pawlow has demonstrated the inhibitory effect of the carbonate and bicarbonate of soda. Bickel points out that this is a reflex inhibition brought about by contact of the alkali with the duodenal mucous membrane. In cases of gastric hypersecretion he therefore recommends the administration of alkalies before meals and in large doses, so that they may reach the duodenum unaltered. Boas,[1] on the other hand, is firmly convinced of the great value of large doses of alkali given after meals in cases of hypersecretion. In place of sodium

[1] *Deutsch. med. Wochenschr.*, 1907, S. 135.

Digitized by Google

bicarbonate he is in the habit of prescribing one teaspoonful of sodium citrate to be taken four times daily.

Sodium chloride in weak and in strong concentration calls forth a brisk secretion; salted articles of diet consequently lead to a larger outpouring of gastric juice than do unsalted foods. Solutions of sodium chloride, when as strong as 2–8 per cent., appear to paralyse the gastric glands, and Bickel therefore recommends the use of 1·5 per cent. solutions of NaCl. in the treatment of cases where the volume of the gastric secretion is defective. Bismuth subnitrate has very little influence upon the gastric secretion.

Turning to hydrochloric acid, we find that Bickel considers a decinormal solution to be almost as inert as water, but in subacute gastric catarrh associated with an increased formation of mucus the administration of a large quantity of decinormal HCl. to the fasting patient renders the gastric mucous membrane more susceptible to any subsequent stimulus, such as that furnished by the next meal. In Leo's opinion hydrochloric acid given alone and after food has no appreciable effect upon the digestive process, even though the gastric juice contains a sufficiency of pepsine. He explains this apparent paradox by recalling the fact that within the stomach the ingested food lies as it were in strata or layers, the food taken first lying at the periphery, and enclosing that taken later. It should be noted, however, that Scheunert's observations,[1] although confirming the current view that food within the stomach lies in strata, does not support the opinion that only the older or oldest of the layers come into contact with the gastric wall. There can be no doubt, however, that under certain circumstances before the pepsine can penetrate into the central part of the ingested mass, and there act in association with the acid which has been administered, all the latter may have combined with the food. In cases of subacidity or subsecretion Leo consequently recommends the administration of hydrochloric acid together with pepsine. This acid, administered to such a patient, is also beneficial by acting on the duodenal mucous membrane, and thereby regulating the closure of the pylorus. In gastric achylia the length of time the ingesta stay in the stomach is usually too short, and the hydrochloric acid, by leading to the closure of the pylorus, promotes a more thorough gastric digestion, and thus benefits the associated gastrogenic diarrhœa.

In cases of subsecretion Leo gives large doses of a hydrochloric acid and pepsine mixture in warm water thrice daily, the mixture being taken in sips during the course of the meal. As the mixture contains pepsine, the temperature of the water we add must not exceed 40° C. The usual plan of taking the mixture after meals

[1] *Arch. f. d. ges. Physiol.*, Bd. cxiv. 1906, S. 64.

Digitized by Google

should not be followed, for it has been experimentally shown that when a fluid is taken on a full stomach it does not mix with the gastric contents, but passes promptly onwards through the pylorus.

II. *Mineral Waters.*—Such waters as contain free carbonic acid gas or sodium chloride increase the flow of the gastric secretion. The effect of a water containing a number of different salts depends chiefly upon the nature of the predominant salt, but the general statement holds good that all mineral waters, except the alkaline waters, the alkaline sulphated waters (*e.g.* Carlsbad) and the simple sulphated (bitter) waters favour the production of the gastric secretion. Of the bitter waters, however, Hunyadi-Janos has a marked inhibitory influence.

III. *Diet.*—The dietaries suitable for cases suffering from secretory disturbance of the stomach are elaborately described in a recent monograph by Strauss.[1] (*a*) *Hyperchlorhydria:*—After the ingestion of starchy food—undissolved carbohydrates—the total acidity of the gastric contents is not so high as after a protein meal, but the amount of free hydrochloric acid is relatively higher. Carbohydrates in solution, however, and especially sugar taken in a concentrated form, lead to a very scanty production of acid. As an occasional substitute for cane sugar Boas recommends dextrin. Because of the large quantity of extractives it contains, meat is more stimulating than a protein containing no extractives. Consequently meat should be replaced as far as possible by eggs, cheese and vegetable proteins. Fat should constitute one of the main articles of the dietary, for it has been shown to check the secretion of gastric juice in a very decided manner. The consumption of fat in large quantity also relieves the constipation which is so frequently associated with hyperacidity. Adipose tissue—fat enclosed within cells—is less suitable than a finely emulsified fat, hence the fat of bacon, ham or butcher meat is less advantageous than milk, cream, butter, and cream cheese, all of which contain milk-fat. Various oils, emulsions of oils and fats, and the yolks of eggs are also useful, but are somewhat more stimulating than milk-fat.

For a case of hyperchlorhydria Strauss recommends a diet composed of 100–120 grams of protein, as far as possible free from extractives, 200–300 grams of carbohydrate, partly in solution, and about 150 grams of fat. Having regard to the reflex influence of mastication and stimulation of the palate upon the gastric secretion, the patient's diet should not necessitate any undue prolongation of mastication; all the food should be of bland rather than of piquant character, and, as Bickel says, all meat should be minced. Patients suffering from

[1] "Vorlesungen über Diätbehandlung innerer Krankheiten," Berlin, 1908.

Digitized by Google

hyperchlorhydria should be admonished not to take more than three meals a day, and to abstain from eating between meals. Should the patient experience pain while the stomach is empty he may, however, be allowed to take a little milk or a little bland solid food to bind the acid in his stomach.

At dinner all forms of bouillon must be avoided, but a simple vegetable soup may perhaps be permitted. All the starchy food should be taken as early during the meal as possible, and should be combined with butter, cream or oil. Dinner may therefore commence with small slices of well-buttered toast, to which sardines or one of the milder forms of cream cheese may be added. Fish, steamed and served with a plain butter sauce, forms an excellent addition to the menu. Oysters are admissible, but lobster mayonnaise and crab pie may not be partaken of. Meats boiled and then minced may be permitted, but roasts, steaks, highly-seasoned entrées and stews with rich sauces must be sedulously avoided, and the patient should refrain from taking salt, mustard, pepper or other condiment. Of vegetables we may recommend the moderate enjoyment of spinach, cauliflower, tomatoes, and purée of carrot, turnip and peas. All vegetables should be well boiled and mashed. Butter or cream may be added in large quantity. The best sweets are jellies and creams. As sugar in concentrated form and fat are both very harmless, compote of fruit, with the addition of plenty of cream, is eminently suitable at this stage of the repast. If cheese is to follow it should be one that is rich in fat. Cream cheese or stilton, with a small biscuit well buttered, is preferable to cheddar or gorgonzola.

As to liquids, the patient must refrain from all alcoholic and effervescent drinks. Acid white wines are particularly harmful. Coffee is usually unsuitable, but weak tea may be partaken of. Boas utters a word of warning against the common error of supposing that the patient's diet need necessarily be a dry one. Observations carried out after the administration of *dry* test meals indicate that a dry diet most readily enables a superabundant acid gastric juice to act upon the stomach wall.

(*b*) *Hypochlorhydria.*—In cases of anacidity, achylia, or of pronounced subacidity, Strauss advises that the meals should be small but frequent, and that the patients should be encouraged to chew their food very thoroughly. If meat be permitted, only small quantities should be taken, chicken and sweetbread being preferred. The meat must be thoroughly cooked, and should be taken in the form of a mince rendered as piquant as possible. Eggs, milk, butter and cheese are suitable articles to add to the dietary; biscuits and plain cake should be substituted for bread; alcohol is seldom contra-indicated.

Digitized by Google

SURGERY.

By C. B. PAUL, F.R.C.S.,
Assistant Surgeon, Chalmers's Hospital.

Cancer of the Rectum.

There is probably no portion of the alimentary tract in which the results of the radical treatment of cancer are so disappointing as the rectum. The operative mortality is higher than elsewhere, recurrence is frequent, and the patient at the best is left either with an iliac artificial anus, or, not uncommonly, an incompetent sacral one, depending on the variety of method performed.

The object of this abstract is to give an epitome of a method of dealing with rectal cancer brought forward by Dr. Archibald of Montreal in an article entitled "The Operative Treatment of Cancer of the Rectum," *Journal of the American Medical Association*, February 22, 1908. The idea was originally suggested to the author after repeated attempts at closing an artificial anus made for the relief of tubercular proctitis had failed, and in which he had resort to performing total excision of the bowel from the iliac anus above to the natural anus below, at the same time preserving the sphincter and implanting the descending colon into the anus. Although the patient died soon after operation of shock, the fact that he was able to mobilise the descending colon and splenic flexure to so great an extent without, as the post-mortem showed, any signs of necrosis, suggested at once its possible adoption in the treatment of rectal cancer, when the growth is well above the sphincter region. The method, however, is as yet quite untested, and for purposes of comparison does not possess the advantage of statistical support; but, provided that the anastomosis of the end loops in the mesentery can be relied on to maintain an efficient circulation after division of the main vessels and freeing of the mesentery, and that the initial shock of the severe and prolonged operation is not too great, Archibald's method may have distinct advantages.

The drawbacks to Kraske's operation are chiefly that the access to the disease is limited and insufficient to permit of complete "block" removal of the bowel and entire affected lymph territory, which has been proved to extend up to and even beyond the promontory of the sacrum, while the line of section of the sacrum does not reach higher than the level of the third sacral foramen. Also, if the bowel is cut across well above the disease, it is impossible to bring down the upper end to the anus without causing tension, with subsequent necrosis of the bowel and leakage. Lastly, the nervous mechanism of the sphincter is often so damaged that fæcal control is lost.

Digitized by Google

The combined abdomino-perineal method, which has largely replaced the sacral route, while it permits of a thorough removal of the disease, possesses the disadvantage of inflicting on the patient a permanent iliac anus. Its mortality also, even in experienced hands, is high.

Archibald's operation, therefore, claims to provide for a thorough removal of the disease, at the same time avoiding the formation of an artificial anus.

In order to determine the extent to which it is possible to detach the intestine and bring it down, a series of experiments was carried out on the cadaver and on animals, and their results showed in a striking manner how freely the circulation is kept up by the anastomosis at the mesenteric border of the bowel. The main vessels were ligatured in the mesentery close to their origin, and by injecting the thoracic aorta with red lead and starch the channels by which the injection was spread were demonstrated by means of skiagrams. When the superior hæmorrhoidal and all the sigmoid arteries were ligatured the injection was traced down to the end of the sigmoid; ligature of the trunk of the inferior mesenteric near its origin, as well as the left colic and the three sigmoid arteries, gave an equally free anastomosis.

The experiment on which the routine operation was based consisted in resecting the bowel from the middle of the pelvic colon above down to within two inches of the anus, dividing the mesentery of the proximal end, and ligaturing the superior hæmorrhoidal and three sigmoid arteries at their origins, and then detaching the iliac colon from the iliac fossa as well as the descending colon, and pulling the bowel thus freed down to just through the anus. Notwithstanding so extensive an interference with the vascular supply of the bowel the skiagram showed an equally good anastomosis.

Other experiments showed that the weakest part of the collateral circulation is the communication between the lowest sigmoid loop and the uppermost branch of the superior hæmorrhoidal; the bowel should therefore be divided above this dangerous zone, where the anastomosis is more free. In the Kraske operation the bowel is divided through this doubtful zone, and this fact, plus tension, may explain the frequency with which sloughing of the anastomosis occurs.

As a whole the experiments prove that it is possible to cut off the arterial supply to the descending colon, sigmoid and rectum and yet preserve the circulation in the end loops down to the lower end of the sigmoid so long as the vessels are ligatured far back so as not to interfere with the important anastomotic loops of the mesenteric border.

In carrying out the operation the Trendelenburg position is adopted and lumbar anæsthesia may be employed to diminish the shock. A

Digitized by Google

preliminary colostomy is not performed as it interferes with the mobilisation of the bowel.

The abdomen is opened by a mesial incision and the extent of the disease investigated. If on examination the case is considered operable the sigmoid loop is pulled up and the glandular involvement determined, as the level at which the bowel is to be cut across depends on this. If no diseased glands are found the bowel should be cut across not lower than the promontory in order to be above the suspect area. When enlarged glands are found higher up in the meso-sigmoid or along the iliac or inferior mesenteric arteries, the bowel will have to be divided higher up in the flexure, but that will largely depend on the width of mesentery which may safely be left after removing the glands.

The bowel is then crushed with crushing forceps, double ligatured in the furrow and cut across, each end being cauterised and inverted by a purse-string suture. The lower segment is pulled forwards and the superior hæmorrhoidal vessels put on the stretch and divided between two ligatures as they lie in the lumbo-sacral part of the mesentery.

The reflection of peritoneum off the rectum is then divided, and the tumour and contents of the sacral hollow peeled off down to near the tip of the coccyx. In front it is separated from the back of the bladder until below the lower limits of the growth, *i.e.*, about 2 inches from the anus. In many cases the middle hæmorrhoidal vessels will not need to be ligatured, but may be if necessary. The rectum is then cut across just above the levator ani and infection prevented by clamping and the use of the cautery. An assistant stretches the sphincter and everts the lower portion with volsellum forceps, turning it outside in.

The upper segment is then mobilised so as to permit of its being brought down to the anus without tension. This may necessitate stripping the iliac colon inwards, and dividing the inferior mesenteric and all the sigmoid arteries. When sufficiently freed it is telescoped through the everted lower portion, the purse-string suture removed, and the two ends anastomosed outside the anus and then returned.

The rent in the recto-vesical pouch of peritoneum is repaired by stitching the edges to the bowel wall, in this way closing off the peritoneum and preventing subsequent hernia.

The abdominal wound is closed, but pelvic drainage may be maintained for a few days by a tube inserted through a special opening between the anus and coccyx.

Digitized by Google

DISEASES OF THE THROAT, NOSE AND EAR.

By R. M'KENZIE JOHNSTON, M.D., F.R.C.S.,
Consulting Surgeon;
and
J. S. FRASER, M.B., F.R.C.S.,
Assistant-Surgeon Ear and Throat Department, Royal Infirmary, Edinburgh.

The Differential Diagnosis of Tuberculosis, Syphilis and Malignant Disease of the Larynx.

This important subject formed the first topic for discussion at the annual meeting of the British Medical Association in 1907. Sir Felix Semon, who introduced the question, remarked that differential diagnosis was usually easy, not rarely difficult, and in exceptional cases for a time almost impossible. As examples of the class that are easy to distinguish he takes the following:—(1) A hectic young individual with characteristic history and constitutional symptoms, whose larynx presents an appearance of pallor, with the epiglottis and arytenoid cartilages changed into rounded semi-transparent tumours, or with the larynx wholly or in part superficially ulcerated. (2) Deep ulceration of the larynx without tumefaction in the neighbourhood, or cicatricial adhesions leading to deformity of the larynx when evidence of other syphilitic lesions is present. (3) A patient of advanced age with a large ulcerating tumour, enlarged cervical glands, fœtor of breath, frequent small hæmorrhages from the throat, general cachexia, and pain shooting from the throat to the ear.

1. In regard to difficult cases Semon first discussed the question of *congestion of the vocal cords.* (*a*) *Bilateral congestion* is usually due to catarrh or to overwork, but is sometimes a sign of secondary syphilis or commencing tuberculosis. The obstinacy of the congestion, in spite of treatment, leads to a suspicion that the trouble is not merely catarrhal: congestion of the vocal cords, with marked pallor of the pharynx and epiglottis, makes one think of tuberculosis, while characteristic signs in the lungs, hectic temperature and the presence of tubercle bacilli in the sputum make the diagnosis of tubercular laryngeal catarrh almost certain. Mucous patches are rarely present in the larynx, but are diagnostic; but mucous patches in the fauces and pharynx along with a roseolar or papular skin eruption, and a history of primary sore, lead the observer to regard a laryngeal catarrh as due to secondary

Digitized by Google

syphilis. Haring, in the subsequent discussion, stated that in secondary syphilis the anterior parts of the cords are more congested than in tubercle or simple catarrh. Bilateral congestion of the cords is very rarely the forerunner of malignant disease, but Semon mentions one case. (*b*) *Unilateral congestion*, unless caused by traumatism, should be looked upon as a danger signal with regard to the possible development of tuberculosis, syphilis or malignant disease: this is a good but not an invariable rule: it is, however, impossible to say from laryngoscopy whether the mischief will be tubercular, syphilitic or maligant, and all concomitant circumstances must be taken into account. Dundas Grant thinks that a unilateral congestion is suggestive of tuberculosis in the very early stages, but if the laryngeal condition is unilateral at a late stage, it is equally probable that it is not tuberculous.

2. *Tumour Forms of the Three Diseases.*—Tubercular laryngeal tumours are very rare; they may start from any part of the larynx, and their appearance and colour are not characteristic. They are usually rounded and vary in size from a split pea to a marble, and resemble sessile fibromata, commencing malignant growths and gummata in the pre-ulcerative stage. These tubercular tumours further develop in patients who have no cough and no demonstrable lung lesion, and, further, their smooth surface makes the removal of a piece for microscopic examination very difficult or impossible. To exclude syphilis, potassium iodide should at once be given and the case closely watched; if this does not clear up the diagnosis, operation should be advocated, because danger may result from further delay, although it is quite possible that the tumour may be tubercular and not malignant. Gummata occur in the larynx in three forms: (1) as rounded nodules varying in size from small shot up to that of a pea, elevated above the surrounding mucous membrane, generally situated close together and covered by mucous membrane, which gradually acquires a yellowish tint; (2) as gummatous infiltrations; (3) as a circumscribed gumma which may be as large as a pigeon's egg, covered by yellowish mucous membrane, and surrounded by an area of congestion or œdema. These swellings break down suddenly and form deep, dirty ulcers; they occur late in life, when the cause of the trouble may really have escaped the memory of the patient.

3. *Ulceration.*—Laryngeal tuberculosis in middle-aged people

Digitized by Google

is often wrongly diagnosed as malignant disease. Grünwold found that 20 per cent. of cases operated on for malignant disease were really cases of tuberculosis. Examination of the lungs and sputum and of the temperature chart may be of service. Differential diagnosis between tubercular and syphilitic ulceration in middle-aged people is difficult. The tubercular ulcers are usually pale, slow in developing, numerous, small, and situated on both sides of the larynx; the syphilitic ulcer is inflamed, and more rapid in growth, single, large, and deep. The presence of the spirochæta pallida in the discharge would be of great aid in diagnosis. Birkett (the President of the American Laryngological Society) has found tuberculin of the greatest value as a means of diagnosing laryngeal tuberculosis.

Diagnosis between syphilitic and malignant ulcers is not usually difficult, because of the much greater tumefaction of the margins of malignant ulcers, and of the greater enlargement of the cervical glands in cancer. In some cases the administration of potassium iodide and microscopic and bacteriological examination may be necessary to arrive at a diagnosis.

4. *Infiltration.*—Diffuse infiltrations of the posterior wall or one side of the larynx present the greatest diagnostic difficulties. Concomitant signs are of great value, *e.g.* phthisis pulmonalis, skin eruptions, signs of tertiary syphilis, extreme enlargement of the cervical glands. Potassium iodide should be at once given to clear up the diagnosis. Semon remarks that the truth of the matter is that the perichondritis engendered by syphilis, tuberculosis, or malignant disease completely masks the signs of the original affection. One must not judge too rashly from a certain degree of improvement under the administration of potassium iodide, for the diagnosis of syphilis is only justified when actual disappearance of the infiltration has occurred.

5. *Combination of two or more of these diseases in one patient.*—A tuberculous patient may become syphilitic or affected by malignant disease, while a syphilitic patient may acquire tuberculosis or cancer. The old idea that tuberculosis and malignant disease were mutually exclusive has long been given up, and Semon has recorded a case where laryngeal cancer co-existed with pulmonary tuberculosis. The possibility of secondary syphilitic laryngitis in a patient with pulmonary tuberculosis must not be forgotten.

Digitized by Google

Dr. Jobson Horne approached the subject from the standpoint of the exclusion of tuberculosis, and remarked that the natural anxiety of the specialist is that he may overlook malignant disease in its earlier stages. Horne says that pain is experienced much earlier and more continuously in malignant disease; at first it is localised to the larynx, but afterwards it radiates to the ears. The voice in tuberculosis of the larynx is much weaker than in cancer or syphilis, in which the voice is strong, though hoarse. Horne further points out that a knowledge of the distribution of columnar, tessellated and transitional epithelium in the larynx is of great importance. The parts of the larynx covered by columnar epithelium and rich in glands are most liable to tubercular infection, *e.g.* the ventricles of the larynx and the posterior part of the ventricular bands as they pass up to terminate between the cartilages of Wrisberg and Santorini. The parts covered by squamous epithelium, *e.g.* the middle thirds of the vocal cords, are relatively immune to tubercular infection, but are the most frequent sites of origin of epithelioma. As an aid to diagnosis of the site of origin, Horne advises the application of cocaine and adrenalin by means of a drop syringe, in order to reduce swelling and congestion. Impaired mobility of a cord is not peculiar to malignant disease, but is more marked and persistent in this condition than in tuberculosis. Pachydermia "simplex" may, according to Horne, produce impaired mobility, but the pachydermatous condition may be brought about by syphilis, tubercle and malignant disease, as well as by simple chronic inflammation. It is generally agreed that, unless a patient is prepared to submit to an operation for the removal of the disease in the event of a positive microscopic examination, it is as well not to advise the removal of a fragment of the growth. Should such removal be carried out, punch forceps should be used, and the piece of tissue placed at once in sterile saline solution in order that an animal experiment may be carried out with a fragment of the growth in order to exclude tuberculosis.

In this connection Hurd (*Laryngoscope*, July 1907) calls attention to the fact that even microscopic examination is not to be relied on unless tubercle bacilli are found. Giant cells and caseation may be found in syphilitic lesions, and arteritis in tubercular conditions; inoculation is therefore very valuable. This writer believes in large doses of potassium iodide and mercury, as

Digitized by Google

the ordinary doses show small results in these connective tissue changes. Hill always gives mercury by inunction as well as the exhibition of potassium iodide for diagnostic purposes. Horne states that external glandular enlargement is greatly in favour of malignant disease in the larynx, but is also found in laryngeal tuberculosis, especially if active local treatment has been carried out. In cases of swelling below the vocal cords, Horne has found advantage from using two transillumination lamps, applied laterally over the sides of the thyroid cartilage in a dark room. The laryngeal examination is, of course, carried out in the usual way by means of the laryngeal mirror, no forehead mirror being required. This observer has not found the opsonic index of much help in the diagnosis of laryngeal tuberculosis.

In replying, Sir Felix Semon said that Dr. Horne's statements as to the site of origin of the various diseases in the larynx were of great interest, but that he had seen malignant disease, tuberculosis and syphilis start in any part of the larynx. Fixation of one cord was only of use in diagnosing between innocent and malignant tumours, and was of no service in differentiating malignant disease from tuberculosis or syphilis.[1]

PATHOLOGY.

By THEODORE SHENNAN, M.D.,
Pathologist, Royal Infirmary.

On Diagnostic Reactions in Tuberculosis, with especial Reference to V. Pirquet's Cutaneous Reaction.

Owing to the extreme difficulty and uncertainty experienced even by specialist experts in the detection of Tuberculosis in man in its early stages by means of the usual physical signs, a test reaction, directly and solely referable to the application to the individual of the causative bacillus (endotoxin) or its chemical metabolic products (exotoxin), and of a kind which can be carefully watched and its course more or less exactly followed, has been a great desideratum. This want has been supplied to a considerable extent by recent investigations.

At the present time practically only two substances are available for the purpose.

[1] *Journal of Laryngology*, November 1907.

Digitized by Google

A, an Emulsion of washed Tubercle Bacilli, and *B*, the Old Tuberculin, a glycerine extract of the products of metabolism of the tubercle bacillus. This was introduced by Koch, and was first applied by him for diagnostic purposes about the year 1890.

A. We may dismiss the former medium at once. The emulsion is employed according to the opsonic technique introduced by Sir A. Wright, and the grade of phagocytosis induced by the patient's fresh serum before and after heating it, or before and after inoculation with minute quantities of new Tuberculin (T. R.)—which in tuberculous patients usually produces a negative phase—is estimated.

Numerous papers have appeared recently in the medical press of this country dealing with this portion of my subject, especially by Wright, Bulloch, Dean, Robert Muir and others. Papers by local authors, such as Dingwall Fordyce, Stuart and Peel Ritchie may also be consulted. Some of them appeared in this *Journal*.

The general feeling is still one of uncertainty as to the value of the reaction, an uncertainty which is not, however, in the least shared by some of those who have worked most prominently at the subject, *e.g.* Wright and Bulloch, and it may be that the general want of enthusiasm in the procedure is rather due to the immense amount of labour and time necessary for the performance of any great number of tests, which is frequently quite unappreciated by those for whom it is done. One must also have a reasonable amount of confidence in the results evolved by the investigator inspired by his long experience, technical dexterity, and knowledge of the pitfalls more frequently encountered in this than in most other diagnostic methods.

B. Tuberculin Reactions (Old Tuberculin).

1. The first of these reactions is *Koch's Temperature Reaction (Kochshe Fieber)*. The reaction was described by Koch at the Tenth International Congress in 1890. His results then showed that healthy adults could twice undergo an injection of 1 cg. of tuberculin without any appearance of illness. In larger doses even healthy individuals experienced fugitive pains, and eventual rise of temperature. The value of the reaction has made it *the* test for tuberculosis in cattle and other domestic animals, and during the last eighteen years it has also been used in man, but to a greater extent on the Continent than in this country. Doses varying from 0·01 mgm. to

Digitized by Google

2 mgm. have been given, a usual dose being 0·5 mgm. or under. Most tuberculous children react to 0·3 mgm. or less, whereas healthy children have received 8 to 10 mgm. without reaction. Excessive reactions in tuberculous patients are dangerous.

Sources of Error in Koch's Reaction.—The most severe cases of pulmonary phthisis and of generalised miliary tuberculosis show no reaction, and a similar result is found in emaciated and cachectic tuberculous patients. Kohler and Behr also draw attention to the occurrence of the reaction in 25 per cent. of cases of hysteria, without coexistent tuberculosis.

2. *Escherich's Puncture Reaction* ("*Stichreaktion*").—Epstein and Escherich introduced this test.

Escherich noticed in cases tested by Koch's original method a local inflammatory reaction surrounding the puncture wound, and considered this specific. Most succeeding authors either do not mention the reaction, or ascribe to it no importance, until Schick of Gratz, who states that only tuberculous patients show the reaction.

Reuschel (Gratz) found that the great majority of cases gave this local reaction, and that it could be elicited even when the presence of high temperature forbade the employment of Koch's reaction.

Of tuberculin diluted with 0·85 per cent. sodium chloride so that 1 c.cm. contains 0·5 mgm. of tuberculin, 0·2 mgm. is injected. After twenty-four hours the puncture is surrounded by a rose-coloured to livid-red area 1 to 2 mm. broad. The reaction extends until an oval swelling develops, covered with congested œdematous skin. It reaches its maximum in forty-eight hours, and then begins to resolve. (Reuschel.)

Sources of Error.—Some cachectic patients, and also some non-phthisical children with (local) tuberculous infection may show no puncture-reaction or only a weak one although developing a temperature. In miliary tuberculosis no reaction may develop. Some individuals only show reaction on repeating the test.

This reaction may be employed successfully in cases which fail to give a von Pirquet's reaction (*v. post*).

3. *The Conjunctival Reaction of Wolff-Eisner.*—The originator of this reaction objects to the name "Ophthalmo-reaction" which was first applied to it by Calmette, whose name has become more associated with the reaction than his own.

As this reaction has already been considered in these pages by

Digitized by Google

Dr. Boyd, I need not discuss it further, save to state that the very fact of its being applied in the case of such an important organ as the eye makes physicians in this country timid in its employment, and a more serious objection is that in some cases—no doubt few in number—it does in very fact prove to be an ophthalmo-reaction producing severe purulent conjunctivitis and even keratitis with risk of disorganisation of the eye. Moreover, if a subcutaneous injection of tuberculin be administered, even after a lapse of a period of months, the local reaction is again induced, sometimes more strongly than before.

4. *Von Pirquet's Cutaneous Reaction and its Modifications.*—This reaction is not well known in this country, and on that account I propose to deal with it in some detail.

Although the reaction was described a short time before the conjunctival reaction just referred to, the latter has become perhaps more widely known, and more has been written about it, but nevertheless a considerable body of literature on v. Pirquet's reaction, almost altogether in German and French periodicals, is even now available, which enables one to form a judgment as to its suitableness, limitations and general safety. It is the most easily managed of all the tuberculin reactions.

Von Pirquet (Vienna) had been engaged in extended studies on the nature of vaccination against small-pox, and in the course of these had discovered or rediscovered much that is new and important.

Amongst other things, he found that even after repeated vaccination complete immunity practically does not exist. However often a man is inoculated, a rapidly disappearing small papule appears regularly after about twenty-four hours, whereas in primary vaccination the papule develops for the first time after three or four days.

From the early vaccinal reaction (vakzinale Frühreaktion) one may be certain that the individual concerned has been vaccinated at a still earlier period. This early reaction v. Pirquet designates "allergic," indicating under the term "allergy" the altered reaction which the organism manifests against infective agents or substances already known to it. He regards it as an "antikörper" reaction, which develops on the vaccinal toxin meeting with the corresponding anti-body already existing in the skin.

Allowing that the vaccinal "early reaction" permits one to infer

Digitized by Google

a previous vaccination, v. Pirquet thought that other infective diseases after once attacking an individual, should at a later date furnish an allergic reaction, and indicated as specially suitable diseases tuberculosis, typhus abdominalis and diphtheria.

In the first place, he investigated this principle in tuberculosis, and from a study of nearly 1000 cases soon determined the high diagnostic value of the method.

For the purposes of the reaction the tuberculin is introduced into the outer part of the skin, the superficial layers being removed so as to give access to the lymph spaces in the skin. V. Pirquet employs diluted tuberculin, and states that the dilution to which the reaction is positive is in a constant relationship to the diameter of the local lesion, so that by measuring this one may estimate quantitatively the susceptibility of the individual. In practice he recommends the use of a 25 per cent. tuberculin, and that this be inoculated on the skin of the arm. The operation is closely analogous to that of vaccination, and the result is also comparable to the local reaction in Jennerian vaccination.

V. Pirquet found that 88 per cent. of his tuberculous children reacted positively, the reaction being given most clearly in cases of bone tuberculosis and scrofula, and that the remaining 12 per cent. were cachectic or suffering from miliary tuberculosis, or had been inoculated too near the fatal issue. Ten per cent. of clinically non-tuberculous children reacted positively. Other authors state that 15 per cent. of clinically non-tuberculous children give a positive reaction, and are of the opinion that this almost certainly points to the existence of tuberculosis in a latent form, arguing from the statements made that 15 per cent. of apparently non-tuberculous children in the first two years of life coming to post-mortem examination show hidden tuberculous lesions, *e.g.* caseous glands.

V. Pirquet at first concluded that the reaction was only applicable in the case of children in the first year of life. On account of the prevalence of tuberculosis in older children and adults these almost without exception give the reaction. Nevertheless he expressed the opinion that the reaction might later be of practical value even in adults when we learned to estimate the delicacy of the local reaction, its time of onset and extent, and the proper dilution of tuberculin to employ. This has, in point of fact, been accomplished to a great extent, and a reaction in the distinctly non-tuberculous adult can in most cases be distinguished

Digitized by Google

from that occurring in a tuberculous adult, as will be shown later. In later papers v. Pirquet states categorically that a positive reaction in children denotes the presence of tuberculosis, and that in adults tuberculosis may be definitely excluded if they fail to react.

The different points are best considered separately.

(*a*) *The Material used in Inoculating the Skin.*—Von Pirquet's original fluid was made up as follows:—Koch's old tuberculin, 1 part; 5 per cent. carbolic glycerine, 1 part; sodium chloride (0·85 per cent.), 2 parts. Junker found that 5 per cent. glycerine was not free from irritating properties, so substituted 3 per cent. glycerine in 0·5 per cent. carbolic acid. This author as well as M. Oppenheim came to the conclusion that a 10 per cent. dilution produced a more delicately graded reaction. Mainini used a 1·2 per cent. dilution, but Junker inclines to think this too weak. Reuschel uses both concentrated tuberculin and 25 per cent. tuberculin, as in this way he finds it easier to estimate the value of a weak reaction. He strongly recommends the former. Goebel and Nagelschmidt consider that it does not matter whether one uses a diluted or a strong tuberculin. Lignières, Vallée, F. Arloing, Bandler and Kreibich use concentrated tuberculin. Most authors have used v. Pirquet's original 25 per cent. dilution.

Et. Burnet precipitates the tuberculin with alcohol, and redissolves it in salt solution, so that 50 mgm. is contained in 1 c.c. of the solution, but states that it is not necessary to use such a strong solution.

Moro, finding that his 25 per cent. tuberculin produced frequently general and distant reactions, as well as the local one, employed an ointment of equal parts of tuberculin and anhydrous lanolin, which he applied to the unbroken skin.

We may conclude that the best dilution of tuberculin is between 10 and 25 per cent., though stronger tuberculin may be employed in the manner to be later indicated.

(*b*) *Methods and Choice of Localities for Inoculation.*—V. Pirquet inoculates over the inner aspect of the forearm. At first he used a dentist's "rose-burr," so as to remove uniform amounts of superficial epithelium, and leave a punched out rounded spot, not necessarily extending down to the corium or drawing blood. A vaccine lancet or other similar instrument may be used to produce the slight excoriation required. More than one excoriation, separated from each other by at least 5 c.m., should be made; a small single drop

Digitized by Google

of the diluted tuberculin placed upon one area, and a drop of the carbolic glycerine menstruum free from tuberculin upon the other, which serves as a control. Reuschel places a drop of concentrated tuberculin on one excoriation, 25 per cent. tuberculin on a second, and the third is left as a control. After drying in the air, the area is covered with a little cotton-wool.

Modifications.—Nagelschmidt soaks up the concentrated tuberculin, after ten to twenty seconds' application, with cotton-wool, and by this procedure usually avoids any general reaction.

Moro and Lignières find that it is not necessary to excoriate the skin surface. The first rubs his ointment of tuberculin on the skin beneath the xiphi-sternum, or on the skin of the breast near the nipple. Lignières simply shaves the surface with a safety razor—thus avoiding accidents in nervous children—and after removing all remaining soap and drying, rubs a few drops of concentrated tuberculin on the surface gently, using a small tampon of cotton-wool in catch-forceps, or the tip of the finger protected by a rubber finger-stall. Slatinéano shaves the surface, and scrapes with a bistoury to the slight effusion of blood, before applying equal parts of tuberculin and distilled water.

(*c*) *The Reaction.*—1. *In tuberculous individuals with healthy skin.*—In a characteristic strong reaction a papule appears in from six to twenty hours, at the site of inoculation. Within forty-eight hours this has become a rounded or coffee-bean-shaped, raised, strongly *hyperæmic papule*, surrounded by a *bright red zone* of the size of a florin or half-crown, the margin of which, at first diffuse, becomes after two or three days sharply defined. This two-zoned reaction is to be looked upon under all circumstances as a positive reaction. In advanced stages of the disease the zone may be wanting, or the congestion of the papule may be less marked.

Upon the papule *miliary vesicles* with turbid contents often develop from the fourth to the eighth day, or even earlier. These break after a few days, and their contents dry up to form a scab.

Junker considers that the papule must *remain prominent* at least until the fifth day, and that a reaction no longer recognisable on the fifth day should be taken as negative. There should be *distinct infiltration* of the base.

The principal characteristics to be noted are congestion and œdema, defined margin, constancy, and distinct infiltration.

Digitized by Google

Occasionally lines of swelling radiating from the papule are seen.

The reaction may be delayed, appearing first on the second or third day. Resolution begins about the fourth to sixth day, with scabbing and formation of superficial scales, the general colour becoming brownish from breaking down of red blood corpuscles, and in about eight to ten days, sometimes longer, the swelling has disappeared. Local pigmentation remains for months. Small cicatrices may remain at the sites of inoculation.

No pain, general increase of temperature, or other general symptoms, should be experienced.

The control areas show slight congestion and local tumefaction, which disappear after twenty-four hours, and even this evidence of slight traumatism may not be distinct.

If the inoculations are repeated in the course of a week or two, even though former reactions have not yet completely resolved, similar phenomena follow, but they appear sooner and disappear sooner on each successive application of the test. Occasionally, when a reaction fails to develop, a repetition of the procedure will elicit it; hence in doubtful cases it is as well to repeat the inoculation.

As in the case of the conjunctival reaction, subcutaneous inoculation of tuberculin revives the local cutaneous reaction, even after a period of some months has elapsed.

The strength of the reaction varies with the strength of the tuberculin, and in all cases gradually lessens towards the close of life, failing to develop from two to eight days before that event.

Goebel applied this method in eighty-five clinically non-tuberculous patients with fractures, herniæ, acute suppurations, and the like. Of these, fifty-five showed no reaction.

2. *The Reaction in Presence of Tuberculous Disease of the Skin.*—In such conditions a hypersensitiveness of the skin is manifested; the reaction is very strongly marked, and usually leads to *ulceration* of the tuberculous areas. Papers by Bandler and Kreibich, and by Nagelschmidt may be consulted.

Advantages of the Reaction.—It can be employed in young children, using, if necessary, in nervous individuals the modifications suggested by Moro or Lignières.

It causes no pain, no increase of temperature or other general reaction. In healthy skin of tuberculous patients it soon disappears, leaving pigmentation. It can be employed in cases with existent temperature, and may be repeated.

Digitized by Google

Disadvantages.—Tuberculous patients in a cachectic condition, or suffering from miliary tuberculosis, or approaching their end, give no distinctive reaction, or it fails completely. These disadvantages are also shared by Koch's and Escherich's reactions. Oppenheim noted in adults, and Moro and Doganoff in children, the occurrence of lichenous eruptions resembling very closely lichen scrofulosorum and also phlyctenular conjunctivitis. These were, however, chiefly met with in patients with tuberculous skin disease, and are not of usual occurrence in tuberculous patients with healthy skin.

Consideration of the histological changes produced in the local reaction, and the explanation of the phenomena encountered, must be deferred to another occasion.

REFERENCES.

Abrami, A., et Burnet, Et. *Cpt. rend. Soc. de Biol. Par.* 1907. lxiii. 113.

Arloing, F. *Cpt. rend. Soc. de Biol. Par.* 1907. lxii. 1171, 1215; lxiii. 499.

*Bandler, V., u. Kreibich, K. *Deut. med. Wochensch.* 1907. xl. 1629.

Boyd, F. D. *Scott. Med. and Surg. Jl.* Vol. xxi. 1907. p. 528.

Burnet, Et. *Cpt. rend. Soc. de Biol. Par.* 1907. lxii. 1156.

Cohn. *Berl. klin. Wochensch.* 1907. H. 45, S. 1507. Ref. Feer.

Epstein. *Prag. med. Wochensch.* 1891. Ref. Reuschel.

Escherich. *Jahrb. f. Kinderheilk.* Bd. xxxiii. Ref. Reuschel.

*Feer, E. *Münch. med. Wochensch.* 1908. H. 1, S. 6.

Goebel, W. *Münch. med. Wochensch.* 1908. H. 4, S. 166.

*Junker, F. *Münch. med. Wochensch.* 1908. H. 5, S. 218.

Kohler u. Behr. *Münch. med. Wochensch.* 1904. Bd. 48. Ref. Reuschel.

Lemaire, Jules. *Cpt. rend. Soc. de Biol. Par.* 1907. lxiii. 299 and 330.

Lenhartz. *Münch. med. Wochensch.* 1907. S. 2404.

Lignières, J. (Buenos Aires). *Centralbl. f. Bakter. u. Parasit. Orig.* 1908. H. 4, S. 373.

Mainini. *Münch. med. Wochensch.* 1907. H. 52, S. 2583.

*Moro u. Doganoff. *Wien. klin. Wochensch.* 1907. H. 31, S. 933.

*Moro, E. *Münch. med. Wochensch.* 1908. H. 4, S. 216.

Moser. *Deut. med. Wochensch.* 1907. S. 1888.

*Nagelschmidt, F. *Deut. med. Wochensch.* 1907. 40, S. 1631.

Oppenheim, M. *Deut. med. Wochensch.* 1907. 34, S. 1371.

*V. Pirquet. *Wien. klin. Wochensch.* 1907. 25, S. 783; 38, S. 1123; 41, S. 1271.

**Reuschel, F. *Münch. med. Wochensch.* 1908. H. 7, S. 326; H. 8, S. 397.

Schick. *Jahrb. f. Kinderheilk.*, lxi. 1905. S. 811. Ref. Reuschel.

Slatinéano, A. *Cpt. rend. Soc. de Biol. Par.* 1907. lxiii. 219.

Vallée, H. *Cpt. rend. Soc. de Biol. Par.* 1907. lxiii. 8.

Wolff-Eisner. *Münch. med. Wochensch.* 1908. H. 2, S. 65. Ref. to earlier papers.

The more important papers are marked with asterisks.

Digitized by Google

New Books and New Editions.

Medical Diagnosis. By C. L. GREENE. Pp. 660. London: Rebman, Limited. 1907. Price 13s. 6d. nett.

THE scope of this book is much wider than may naturally be expected from its title. The author does not confine himself to the description of methods of diagnosis, but endeavours also to ensure that the reader shall have a clear mental picture of the lesion to be associated with any particular group of clinical facts. With this object in view he has devoted a very large share of the 660 pages to pathology. For a book on Medical Diagnosis another unusual feature is the systematic description of diseases. Here and there throughout the book one comes on passages dealing with therapeutics. In some respects, therefore, this is a text-book of medicine, and the title, "Medical Diagnosis," is misleading.

The following are examples of statements which are out of place in a book on diagnosis—"The importance of good teeth in connection with chronic dyspepsia is too little appreciated by the practitioner. Many obstinate and persistent ailments are promptly cured by prompt attention to the remaining teeth, the use of dental bridges, or extraction and the substitution of properly fitting plates." "Quinsy should not be allowed to go on to spontaneous rupture." In empyæma, "forced respiration is necessary, and might demand the exhibition of morphia." In a first edition there are naturally errata. "Phenomina" is twice used when the singular is intended. At fig. 14 the word "oblique" should be "transverse." The term "relaxed lung" is mentioned without any indication being given in the text or in the illustration as to nature of this condition. The term has a proper significance, but the student is generally left by teachers of pathology and clinical medicine to his own imagination to discover what this is. The description of fig. 37 also appears to be erroneous. The author states that "auscultation may be either mediate or immediate at the pleasure of the auscultator." This statement is capable of more than one interpretation. Let us hope that the pleasure of the auscultator in examining a female patient will invariably be to employ mediate auscultation.

In hydrothorax the fluid is intra-pleural, but not "pleuritic."

In the diagnosis of pulmonary and cardiac disease mensuration is considered to be of comparatively slight value, the subject being dismissed in a footnote. This view will probably strike the majority of clinicians as a dangerous one to hand on to the student. The

Digitized by Google

following statement will not be intelligible to the student: "In the auscultation of heart murmurs, however, it is necessary to alternately increase and diminish the pressure by which systolic murmurs are intensified and presystolic murmurs diminished."

These are a few examples of defects which are too numerous even for a first edition, but in spite of this the book is one which commands a great deal of admiration. Every section of the book is of high standard, and when some minor defects are removed in a second edition, the author will have supplied an extremely useful handbook on diagnosis.

Marginal notes and running page headlines supplement the full index, and the numerous illustrations are generally helpful. Some of the marginal notes might be deleted in a serious book, such, for example as "Bow-windowed Risks."

An Introduction to Child-Study. By W. B. DRUMMOND, M.B., C.M., F.R.C.P. Pp. 348. London: Edward Arnold. 1907. Price 6s. nett.

THE subject of this book is one which has occupied a great deal of attention in recent years, and a manual like this, which deals with it in a fairly comprehensive way, deserves, and is sure to receive, a hearty welcome.

Child-study, as Dr. Drummond points out, means simply the study of children by the methods of modern science. Its aim is the better understanding of the child by his parents and teachers, so that they may be able intelligently to guide the development of his mind, and not merely to instil facts into him. People are beginning nowadays to recognise that the ideal teacher must not only know the subject he wishes to impart, but that he must also have some acquaintance with the mind of the child to whom he has to impart it. Otherwise much of his labour is misspent, and he may even run a risk of doing harm to his pupil.

After a short chapter dealing with the advantages of his science, the author discusses the preparation required for its successful study and practice. He describes the necessary scientific spirit—its passion for facts, its wholesome scepticism of old, generally-accepted statements and theories, and the desirability of its being guided by imagination. He then points out the need for caution in dealing with facts at all stages, in the observation as well as in the interpretation of them, in the generalisations made from them, and in the application of these to practical work. He refers, too, to the possible harm that a thoughtless and tactless scientific observer may do to the children he studies.

Digitized by Google

A long and very interesting chapter is devoted to the light cast by biology and evolution on various peculiarities of the young child. The methods of child-study which have from time to time been employed are next dealt with, and the best syllabus for practical use described. Then follow sections on the child's growth, on his senses and nervous system, on fatigue, on the child's instincts, on instinct and habit, on children's interests, on speech and drawing as forms of expression, and on some moral characteristics. Lastly, there are very suggestive chapters dealing with the child's religion, and with children who are exceptional in any way—bodily or mentally.

The book is thoroughly interesting from beginning to end, and shows many indications of wide reading and independent thought. The author has a pleasant literary style, and is evidently in love with his subject.

An Index of Treatment by Various Writers. Edited by ROBERT HUTCHISON, M.D., F.R.C.P., and H. STANFIELD COLLIER, F.R.C.S. Demy 8vo, pp. 885. Bristol: John Wright & Co. London: Simpkin, Marshall & Co. New York: Wood & Co. 1907. Price 21s.

As a guarantee of the excellence of this reference book we need only call attention to the names of the editors.

It is clear that no pains have been spared to produce a complete and authoritative index of treatment. The various articles, medical and surgical, are lucid and concise, and have the advantage of being thoroughly up to date.

One is gratified at the absence of the "made-up" dish—the hash of previously written articles—so often served up to the patrons of works of this class.

The articles, as already indicated, are clearly written. Illustrations are here and there added to elucidate the text, and, where necessary, prescription formulæ are introduced.

In this connection it is interesting and satisfactory to note how infrequently proprietary medicines are recommended, a matter for congratulation in these days when prescription writing is becoming a lost art.

The editors have made no attempt to give in detail the particulars of the more complicated surgical operative procedures. Minor operations and non-operative modes of treatment are, however, fully dealt with.

Each contribution bears the name of its author.

Digitized by Google

Dr. Byrom Bramwell writes an eminently practical article on valvular diseases of the heart.

Mr. C. W. Cathcart's description of the treatment of fractures is thoroughly in accordance with the modern methods of early movement and massage.

Mental diseases are dealt with by Dr. Clouston; phthisis by Dr. R. W. Philip; and rickets and mental deficiency in children by Dr. John Thomson.

Prof. Stockman contributes the article on chronic rheumatism, while the treatment of various morbid gastric conditions is accounted for by Professor R. Saundby.

Bier's method of treating acute infections by passive congestion is simply explained by Dr. Victor Schnieden of Berlin.

An admirably clear article on bacterio-therapeutics by Dr. Bulloch of London Hospital is worthy of special mention.

The various skin diseases are dealt with by Dr. Norman Walker in his usual effective style. He carefully avoids detailing the bewildering varieties of treatment applicable to certain skin troubles, but contents himself with giving what in actual practice he has found most beneficial.

Of the 70 contributors, we may also mention the names of Professor Clifford Allbutt, Sir James Sawyer, Mr. Lockhart Mummery, Dr. Gulland, Dr. Gibson and Dr. Edwin Bramwell.

The above may give some idea of the value of the contents of this admirable book, which as a work of reference is to be highly commended.

Tropical Diseases: a Manual of the Diseases of Warm Climates. By SIR PATRICK MANSON, K.C.M.G., M.D., LL.D. (Aberdeen). Fourth Edition, thoroughly Revised and Enlarged. Pp. 875. London: Cassell & Co., Ltd. 1907. Price 12s. 6d. nett.

THE rapid succession of four editions of Sir Patrick Manson's "Manual of the Diseases of Warm Climates" is some proof that it supplied a want, and that it did so in an approved manner.

The older treatises, those of Annesley Johnston, Moutier, Ranald Martin, and others, with their carefully recorded cases and accurate remarks on the clinical aspects of tropical diseases, may still be consulted with advantage by those who wish to make a special study of the diseases of India. But the opening up of Africa and other places may be almost said to have given us new diseases, while the enormously increased amount and rapidity of travel and commerce throughout the

Digitized by Google

world has brought a risk of the conveyance of diseases from places where they have long been endemic to other places hitherto safe from risk of invasion, and thus has greatly enhanced the importance of a knowledge of tropical diseases and the necessity for a good text-book. Sir Patrick Manson's book gives a sufficiently full account of all diseases of tropical countries. It is terse, to the point, and up to date. Himself a pioneer in parasitology, his description of the parasites is full and complete, perhaps rather too full for a work of this sort. He is no mere follower of other authorities, but throughout the book there is evidence of his own wide knowledge, clear judgment and carefully formed opinions, and this adds much to its value. In the description of cholera, for instance, he most carefully weighs the evidence for and against the coma bacillus being the germ of cholera; and, similarly, in his account of dysentery there is the same careful discussion of the case of the parasite's association with the disease, and by some stated to be its cause. In some minor matters there might be improvement in a future edition—his enumeration of the clinical types of malarial fever, and of dysentery, is too elaborate and apt to be confusing to a student, and we suggest the addition of temperature charts of the febrile diseases, such as plague, sleeping-sickness, Malta fever, and others.

The book is an admirable one, and may be strongly recommended to students and also to practitioners.

Insanity and Allied Neurosis: A Practical and Clinical Manual. By GEORGE H. SAVAGE, M.D., F.R.C.P. With the assistance of EDWIN GOODALL, M.D., B.S., F.R.C.P. New and Enlarged Edition. Pp. 624. London: Cassell & Co. 1907. Price 12s. 6d.

DR. SAVAGE'S well-known Manual first appeared in 1884, and has been revised and reprinted eight times since. This is sufficient proof of its popularity and merits, as a reliable guide to the study and treatment of mental disorders. The chief feature of the present edition is the appearance on the title-page of the name of Dr. Goodall, whose co-operation Dr. Savage has sought in keeping the Manual up to date, especially in the rapidly advancing department of the pathology of the insanities. The volume has been entirely revised and considerably increased, and includes many new illustrations and several coloured plates. The subject-matter has also been to some extent altered in arrangement. The causation of insanity and general paralysis of the insane each receive three chapters instead of one as formerly; the

Digitized by Google

insanities associated with the grosser lesions of the nervous system (*e.g.*, apoplexy, paralysis, agitans, multiple sclerosis, brain tumour, syphilis, and locomotor ataxia) have been rationally treated in juxtaposition in one chapter, and similarly the insanities associated with visceral diseases and metabolic disorders have been grouped together in another chapter; and following this is a chapter on the insanities due to the toxæmias, acute delirious mania being included in this group. Dementia præcox is given a short description in deference to continental authorities, but it is stated that "the clinical evidence for the recognition of dementia præcox as a definite disease is insufficient." Paranoia is rightly recognised as a distinct disorder, and properly differentiated from the other delusional insanities. A new chapter is devoted to the volitional insanities, obsessions, doubts, impulsions, and the like. These additions, and the special attention which has been devoted throughout to the findings of recent pathological researches, have served to maintain the former high standard of the Manual as a thoroughly reliable guide to students and practitioners of medicine in the difficult field of psychiatry.

The Borderland of Epilepsy. Faints, Vagal Attacks, Vertigo, Migraine, Sleep Symptoms and their Treatment. By Sir WILLIAM R. GOWERS, M.D., F.R.S. Pp. 121. London: J. & A. Churchill. 1907. Price 4s. 6d. nett.

SIR WILLIAM GOWERS has probably done more than any living physician to elucidate the clinical aspects of epilepsy. For many years he has kept a special list of all cases on the borderland of epilepsy, "near it, but not of it." Many of these cases were so placed by their features and character, others because they had given rise to an erroneous diagnosis. These cases form the basis of the present work.

The book must be very closely studied by all who attempt to keep abreast of clinical neurology.

Le Malade et le Medicin. Par le Dr. DOYEN.

THIS is an interesting little work by the well-known Paris surgeon; it has a strongly personal flavour all through. The appeal, it strikes one, is fully more to the public than to the medical profession, and in many of the cases mentioned the gist of the story is praise of Dr. Doyen. One would very much like to hear what the other man had to say about himself and about Dr. Doyen. Taking the statements as they stand, however, they seem to show considerable shortcomings on the part of the general practitioners of Paris.

Digitized by Google

The Treatment of the Diseases of Children. By CHARLES GILMORE KERLEY, M.D., President of the American Pediatric Society, &c. Pp. 598. Fully illustrated. Philadelphia and London: W. B. Saunders Co. 1907. Price 21s. nett.

THIS is an admirable book, clearly, fully and well written, and gives, to an extent that few such books do, an adequate account of the practical details as well as of the principles of treatment. It is founded from beginning to end on a large personal experience, and not merely framed on other people's printed views. As the writer says in his preface, the possibilities of therapeutic measures in the treatment of children have greatly increased during the last decade; and this account of the most up-to-date methods used in America cannot fail to be interesting to practitioners on this side of the Atlantic.

The first chapter deals with "General Considerations," and gives useful advice regarding the medical treatment of children, babies' clothing, the mother's own training, the nursery and its equipment, sleep, baths, the child's weight, outdoor and indoor airing, the examination of the patient and the directions to be given as to his treatment. Dr. Kerley lays wise stress on the vital importance of the mother's education. The second chapter considers the New-born Baby and its Diseases, and the third, on Nutrition and Growth, enters into full particulars on all matters concerning food and feeding. It also deals with the results of imperfect nutrition. There is a particularly interesting section on "the delicate child."

Then follow chapters on Gastro-enteric Diseases, on the Mouth, Throat and Nose, on Diseases of the Respiratory Organs, on those of the Heart, and on Contagious Disorders. Like many other modern physicians, the author believes that, if plenty of fresh air is allowed in the early stages of broncho-pneumonia, there will be much less likelihood of oxygen inhalations being necessary later on.

After short chapters on the Urine and on Diseases of the Genital Organs, there is one on Nervous Disorders, in which we note as particularly good the section on Hysteria. Chorea is regarded as closely allied to rheumatism and anti-rheumatic remedies are recommended. Dr. Kerley gives only 5 grains of salicylate of soda thrice daily, and he combines it with increasing doses of liquor arsenicalis. He believes that the use of the salicylate makes smaller doses of arsenic effectual. We notice, however, that his doses of arsenic are large, and that he goes on with them much longer than we generally consider safe; also that he does not refer to the risk of causing arsenical neuritis.

The succeeding chapters deal with Syphilis, Deformities, Diseases of

Digitized by Google

the Skin, Ear and Glands, Heredity and Environment, Constitutional and Infectious Diseases. In the treatment of inguinal hernia in infants, Dr. Kerley relies mainly on trusses, and regards operation as rarely necessary during the first year. Among the Infectious Fevers he includes cyclic vomiting. For this he recommends, during the attack, large saline enemata, nutrient injections and morphine hypodermically. He does not refer to the use of large doses of alkalines. The disease is regarded as probably a manifestation of the rheumatic diathesis, and salicylate and bicarbonate of soda are recommended to be given in the intervals to ward off the attacks.

The remaining chapters are occupied with the consideration of the Temperature in Children, Vaccination, Instructions for the Summer, Therapeutic Measures, Gymnastic Therapeutics, Drugs and Drug Dosage. There is an excellent and comprehensive index.

Dr. Kerley's book is a very valuable one for the practitioner, and there are few hospital physicians who will not learn much from its perusal.

The Diseases of Infancy and Childhood, for the use of Students and Practitioners of Medicine. By L. EMMETT HOLT, M.D., Sc.D., LL.D. Fourth Edition, Revised and Enlarged. Pp. 1172. 8 Coloured Plates and 241 Illustrations. London: Sidney Appleton. 1907. Price 25s. nett.

IT is only two years since the last edition of Dr. Holt's admirable text-book appeared; and the fourth edition shows but little change except in the chapters devoted to Infant Feeding. These have been largely re-written, and give an excellent and instructive account of the subject from the latest American point of view. Indeed, we know no article of similar size which presents nearly so full, so interesting and so practical an account of this most important subject.

We are glad to have another opportunity of drawing attention to the excellence of Dr. Holt's book. Some other works give evidence of wider reading, but there are very few, if any, that appeal so directly to the practical physician owing to the solid basis of clinical experience which is behind every one of its many pages.

Digitized by Google

The Essentials of Cytology. An Introduction to the Study of Living Matter, with a Chapter on Cytological Methods. By CHARLES EDWARD WALKER, Assistant-Director of the Cancer Research, Liverpool, and Honorary Lecturer in Cytology to the School of Tropical Medicine in the University of Liverpool, formerly Demonstrator of Zoology in the Royal College of Science, London. Preface by Professor C. S. SHERRINGTON, F.R.S. Pp. 139. London: Archibald Constable & Co., Ltd., 10 Orange Street, Leicester Square, W.C. 1907. Price 7s. 6d.

THIS work is interesting in more than one way. In the first place, it shows us that a new science, allied to all the biological sciences, but distinct in itself, has arisen in our midst. In the next place, it constitutes a handbook to the study of the nucleus—that transcendently important structure in living matter; and, lastly, it supplies, in the chapter on cytological technique, precisely what a microscopist, uninitiated into this particular subject, needs to have constantly before him. As Professor Sherrington says in the preface, the subject is treated in such a fashion as to be capable of being understood by the so-called "general reader;" the treatment is not only lucid, but interesting, because not unnecessarily technical. The chapters are on the structure and parts of the cell, cell-division, the meiotic phase, post-meiotic divisions, the male sexual elements, the cultivation of the ovum, fertilisation in multicellular forms, fertilisation in unicellular forms, the probable individuality of the chromosomes, the morphological aspect of the transmission of hereditary characters. The illustrations throughout are exceedingly well done, a new and most acceptable feature being the providing of five very fine photomicrographs for the spereoscope.

The paper, the size of type, the size of page, the character of the binding all merit a word of praise—all show good taste. A book such as this forms an excellent introduction to the study of normal and of morbid histology, to zoology, parasitology, microscopic botany, and to cancer research.

Elements of Physics for Medical Students. By F. J. M. PAGE, B.Sc., F.I.C. Pp. 288. London: Cassell & Co. 1907. Price 5s.

WE have read this little volume with much interest and pleasure. So far as we are aware it constitutes the first successful attempt to give in a small compass, and yet without cramming, a clear and concise account of those elements of physics which are of most importance to the medical student.

It is also well up to date. The book is practical. The author spends

Digitized by Google

no time upon dynamics; he does not even mention the laws of motion or of gravitation, but after some fifty pages upon measuring instruments, diffusion, the important subjects of osmotic pressure and specific gravity and atmospheric pressure, he proceeds at once to heat. His remarks appear to be always well chosen or to the point. After the subject of heat he discusses electricity, sound and light. In so short a book there must be many omissions. We chiefly regret the absence of reference to Newton's laws, the conservation of energy, the Röntgen rays and the principle of the polariscope. If a student fails to get up the elementary theory of the polarisation of light when attending a course of physics, how is he to understand the polariscope when he comes to physiology and clinical medicine?

Pathology, General and Special, for Students of Medicine. By R. TANNER HEWLETT, M.D., F.R.C.P., D.P.H. Second Edition. Pp. 585. London: J. & A. Churchill.

IT is so recently that the first edition of this excellent handbook of pathology was reviewed that the appearance of a second edition within a year calls for little comment. The text has been carefully revised, and a number of desirable changes and additions have been made. These deal mainly with the subjects of heredity, the degenerations, infiltrations, tumours, inflammation, infection, arterio-sclerosis, and the female genital organs. The additions have necessitated an increase of over forty pages. Among the new illustrations we find representations of a rheumatic nodule and of a degenerated auriculo-ventricular bundle. The new features will further enhance the reputation of a manual which is already so deservedly popular.

Proceedings of the Royal Society of Medicine. Vol. I., No. 1. London: Longmans, Green & Co. November 1907. Price 7s. 6d.

A NUMBER of the medical societies of London have amalgamated under the title of The Royal Society of Medicine. The original societies, however, retain their individuality as "sections" of the new body. Thus there are clinical, dermatological, electro-therapeutical, epidemiological, medical, neurological, obstetrical and gynæcological, odontological, pathological, surgical, and therapeutical and pharmacological sections. The present volume contains the proceedings of these various sections. A similar volume is to be published monthly, and the binding is so arranged that by cutting the threads any individual section may be detached for independent preservation.

The volume is well printed on good paper, and contains a large number of interesting articles.

Digitized by Google

Medical Examination Questions. Pp. 230. Edinburgh: John Currie. 1907. Price 2s.

THE volume is made up of the Examination Papers set by the University of Edinburgh from March 1901 to March 1906, as well as the Examination Questions of the Conjoint Board of Scotland from October 1903 to April 1907. The Papers for the Diploma in Public Health for the same periods are included, as are also those for the Single Qualification of the Royal College of Physicians. The aspirant to the membership of the Royal College of Physicians of Edinburgh will find numerous examination papers from which to test his abilities, and similar facilities are afforded to the prospective Fellow of the Royal College of Surgeons. The students of Dentistry are not forgotten, for here we find the examination papers both for the first and second dental examination.

The compilation will prove of the utmost value to those going up for examination, as the only real way to test one's knowledge lies in the ability to answer such questions as have been put to students in the past. The volume is neatly bound and exceedingly well printed.

Life Insurance and General Practice. By E. M. BROCKBANK, M.D.(Vict.), F.R.C.P. Pp. 288. London: Henry Frowde and Hodder & Stoughton. 1908. Price 7s. 6d. nett.

To those who have not much experience in examining candidates for life assurance this small book will prove of great use. Medical referees to life assurance companies will be specially interested in Section II. of the work.

Section I. deals with the method of medical examination, and wisely points out that the examiner, who sees the applicant, should endeavour correctly to record facts which will guide the medical referee who does not see the candidate. The method of examination has lost somewhat in clearness by the inclusion of many things which belong rather to a manual of clinical diagnosis. Some of them might with advantage have been relegated to Section II. on Impaired Lives. Probably the author expects that any examiner of a female applicant would report on her general conformation in relation to child-bearing without being asked to do so. In Section II.—Impaired Lives—there are raised a number of important points in connection with gout, syphilis, the deaths of both parents from the same disease, &c., &c. In discussing questions relating to climate, the author apparently holds the opinion that black-water fever has no

Digitized by Google

relation to malaria. He states that "in any case of heart disease no policy which matures beyond 50 years of age should be issued." A rule of this kind is probably not observed by most life assurance offices. It would press very hardly on a large number of applicants. The value of the book is enhanced by a good index.

The Chemical Basis of Pharmacology; an Introduction to Pharmacodynamics based on the Study of the Carbon Compounds. By FRANCIS FRANCIS, D.Sc., Ph.D., and J. M. FORTESCUE-BRICKDALE, M.A., M.D. Pp. xii. + 372. London: Edward Arnold. 1908. Price 14s. nett.

THE second title of this book best describes its nature. It deals mainly with that branch of pharmacology which is conveniently defined as the relationship between chemical structure and pharmacological action. It also endeavours to give so much of general chemical theory as will suffice to render the subject clear to those who have not recently studied it.

The plan and scope of the book will be gathered from the following headings or sub-headings of chapters:—(1) Chemical Introduction, General Physiological Introduction; (2) the Aliphatic and Aromatic Hydrocarbons, Physiological Characteristics of the Hydrocarbons; (3) Changes in Organic Substances produced by Metabolic Processes; (4 and 5) the Alcohols and their Derivatives; (6 and 7) Aromatic Hydroxyl Derivatives; (8) Antiseptic and other substances containing Iodine and Sulphur; (9 and 10) the main group of Synthetic Antipyretics; (11) the group of Urethanes, Urea and Ureides, the Purine group and Pilocarpine; (12, 13 and 14) the Alkaloids; (15) Synthetic Products with physiological action similar to Cocaine, Atropine, Hydrastis; (16) the Glucosides; (17) Dependence of Taste and Odour on Chemical Constitution, Organic Dyes.

In the preface the authors merely lay claim to giving an outline of the subject as at present understood, but the book is certainly more than this. It deals with most of the pure chemical substances which have been investigated pharmacologically, and especially of those which have a therapeutic bearing, and in some parts an attempt at exhaustive treatment is apparent.

The pharmacological action of the various substances mentioned is indicated, but it is rarely stated whether the action described refers to the lower animals or to man. Thus phenol is said to "produce convulsions of spinal origin;" but this can only refer to its action on the lower animals; convulsions are rarely produced in man. "Not more

Digitized by Google

than 1 to 2 grms. of phenol can be administered" needs some explanation. Again, "iodoform possesses narcotic and hypnotic properties, but is chiefly characterised by its extraordinary antiseptic power," which is almost the whole description of its pharmacological action given; and such statements as "the lethal dose for rabbits begins," "toxic dose for white mice 1000 grms. in weight," require modification.

The chemistry on the whole is clearly written and well up-to-date. We think that such sections as "General methods used in the preparation of the hydrocarbons," "Outline of the methods employed in the synthesis of derivatives of the aliphatic hydrocarbons," "Determination of constitutional formulæ," which may be found in almost any organic chemistry, and which have no distinct bearing on the subject of the book, might have been omitted. The chemistry of morphine and its allies requires bringing up-to-date; and in the chapter on glucosides some reference might be made to the active principles of digitalis. A few curious errors occur: mannitol is described as a pentahydric alcohol; nitroglycerin and hydroxylamine are mentioned under "nitro-derivatives of aromatic series," and are said to "act chiefly on the central nervous system;" chlor-codeine is called chloride of codeine, and tri-chlor-morphine, morphine trichloride. There is also evidence of careless proof-reading; a considerable number of the formulæ are incorrect from this cause, and on page 42 "alkyl" is written where halogen is meant. Notwithstanding these and a few other mistakes we have noted, we have no hesitation in recommending the book to all those interested, and there should be many, in this important branch of pharmacology.

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Fasciculus XXVII., Diseases of Ovary, Fallopian Tube, Uterus, &c. 8 Plates and Text. London: The New Sydenham Society. Price 21s.

THIS, a double number of the New Sydenham Society's well-known Atlas, contains eight large plates with explanatory text, illustrating various pathological conditions of the female generative organs. The plates are of rather unequal merit, both as regards fidelity of reproduction and usefulness for teaching purposes. The first two, numbers CLXXV. and CLXXVI., by H. E. Henning, from specimens removed by operation by C. J. Cullingworth, illustrate some pathological conditions of the Fallopian tube—tuberculous and gonorrhœal pyo-salpinx, hydro-salpinx, and complete and incomplete tubal abortion. These, taken along with the description of the cases supplied, leave nothing

Digitized by Google

to be desired. The next two illustrations are of interest solely from the rarity of the pathological conditions they portray—one, a uterus with greatly hypertrophied muscular walls with many isolated fibro-myomata; the other, a hæmorrhagic carcinoma of the ovary. In Plate CLXXIX., from a case of procidentia uteri, the dense skin-like appearance of the vaginal walls usually seen in such cases is not very well brought out; otherwise the illustration is good. The last three plates are illustrative of affections of the vulva, there being two figures of carcinoma and two of syphilis, and alongside the latter, the mouth lesions from the same cases.

As already said, some of these plates will prove of great value for teaching purposes, and all of them are of interest to the specialist.

Le Ventre. Etude Anatomique et Clinique de la Cavité Abdominale au Point de Vue du Massage. Vol. II. L'Estomac et L'Intestin. Par Dr. F. CAUTRU et Dr. M. BOURCART. 8vo., pp. 332. 81 Illustrations. Geneve: W. Kündig et Fils.

THE first two chapters are devoted to an anatomical and physiological study of the abdomen and its contents, together with notes on digestion and various foods. The next part of the work deals with massage of the abdomen, and the improvement which results from its use, in promoting a better and more active flow of the digestive juices, and the well-being generally of the whole individual. The various types of dyspepsia are dealt with and the manipulations suitable for their treatment.

The general technique is then considered, followed by a careful description of the special methods. This part is well and profusely illustrated. There seem to be few affections, according to the authors, not amenable to or assisted by massage—constipation, diarrhœa, muco-membranous enteritis, volvulus, intussusception and intestinal obstruction. Even if the latter is to be operated on the effects of massage are said to be more helpful than such drugs as belladonna and opium.

A chapter is devoted to the treatment of appendicitis by massage or rather abdominal vibrations, and charts are published to show how the temperature falls under the soothing influence of the skilled hand. Surely the appendix ought to have a statue erected to it by medical men for the helpful way it so often reacts to any form of treatment, and the amount of discussion and literature it has been productive of.

This volume, like the first, will chiefly be of interest to those who practise massage.

Digitized by Google

Gynæcology and Abdominal Surgery. Edited by HOWARD A. KELLY and CHARLES P. NOBLE. Vol. I. Philadelphia and London: W. B. Saunders Co. 1907.

IN edited works written by many contributors there is usually much inequality in the articles, but in this instance we seem to have a marked exception, as the various subjects, treated by many authors, maintain throughout the high standard set by the two editors, who, we are glad to see, have contributed largely themselves.

So far as gynæcology and gynæcological surgery is concerned—and to these the present volume is confined—we have placed before us a collection of practical material of the greatest value and interest. It is a work which must appeal to the general practitioner and gynæcological specialist alike. It is replete with information for his guidance, from the introduction of a pessary to the performance of panhysterectomy in complicated cases.

To attempt to review in detail the various chapters would be impossible. Some, however, from their outstanding merit and usefulness, suggest special mention, such as Chapter XIX. on Fibromyomata, Chapter II. on the Bacteriology of the Reproductive Organs, and particularly Chapter III. on their Pathology. In this a special feature is made of the examination of curettings, which is full of practical hints and valuable facts. Curiously the author has omitted red infarction, or the so-called necrobiosis as a degeneration of uterine fibromyomata, a condition of much clinical and pathological importance.

The chapter on the After-treatment of Cœliotomy Cases is full of practical hints, the result of much valuable experience. It is questionable, however, if the permanent dorsal position as recommended, is the most comfortable; and we much prefer the fixing of dressings by means of adhesive strapping to abdominal bandages, which tend to shift their position and crease.

The chapter on Abdominal Hystero-Myomectomy and Myomectomy is probably the finest in the volume, and is replete with information, statistical and practical, as might be expected from the large experience of the author (C. P. Noble).

Fibroids of the cervix are scarcely mentioned. This is regrettable, considering their great surgical importance.

It seems almost invidious to particularise where the standard reached throughout is so high, and we can only add that, to those interested in gynæcology, or to those who desire a reference work on the subject, there is none we know more worthy of a place in their library. The illustrations are mostly original, and are thoroughly in keeping with the other excellent qualities of the work.

Digitized by Google

Diseases of the Genito-Urinary Organs and the Kidney. By R. H. GREENE, M.D., and HARLOW BROOKS, M.D. 292 Illustrations. Pp. 536. Philadelphia and London: W. B. Saunders Company. 1907.

IN the preface to this work the authors say that they "do not profess that the book is complete; this would be impossible in a work of this size." Further, "the work is the conjoint product of a surgeon and a physician, and it is intended that equal attention should be devoted to both medical and surgical aspects of these diseases." A perusal of the book shows that almost no section of the subject is treated in a complete manner from either the medical or surgical aspect. The description of Bright's disease occupies only 24 pages. Movable kidney is referred to in a rather cursory way, and the method of nephropexy advised for adoption is that of Edebohl. The authors state that the larger renal calculi are demonstrable by X-rays, but they do not give much information regarding the diagnosis of small stones in the kidney; and on page 223 the defective method of examining a kidney, after exposure, by needling is advised. Tuberculous cystitis is said to be secondary to primary tubercle of the kidney, urethra, or prostate, but no mention is made of the epididymis, the most common primary site. Local applications are advised in the treatment of tuberculous lesions of the bladder.

It is not necessary to allude to this work in further detail; the text is to a great extent inadequate for the purposes of the practitioner and is unsuited for students. The book contains many excellent illustrations.

The Edinburgh Stereoscopic Atlas of Obstetrics. Edited by G. F. BARBOUR-SIMPSON, M.D., F.R.C.P., F.R.C.S., and EDWARD BURNET, B.A., M.B., Ch.B. In 4 Sections, each containing 25 Subjects with Descriptive Text. London: The Caxton Publishing Company. 1908. Price 84s. nett.

IN this work the editors have closely followed the lines of The Edinburgh Stereoscopic Atlas of Anatomy. A third of the plates in Section I. are devoted to the normal pelvis viewed from various aspects and in various sections. The latter half of the stereograms represent types of deformed pelves. The letterpress on the earlier plates consists of a systematic description of the structure and measurements of the female pelvis. On the cards showing deformed pelves the text outsteps the limits of mere description, and in a measure suggests the

Digitized by Google

obstetric treatment advisable if such a pelvis be met with in the parturient woman.

The technical skill displayed in taking the photographs maintains the high standard reached in the Anatomical Atlas. The selection of pelves reproduced is, on the whole, judicious, but it seems a pity that three cards out of twenty-five should be devoted to showing and contrasting justo-major and justo-minor pelves; No. 10 alone would have been ample. As the justo-major pelvis depicted is devoid of ligaments it does not afford a satisfactory contrast to the justo-minor and normal pelves, in both of which the ligaments are *in situ*.

The elementary nature, both of the text and of some of the specimens photographed, suggests that the editors have produced Section I. with a due regard to the wants of junior students. The Atlas, however, can never take the place, in the student's library, of a systematic treatise, while the price (£4, 4s.) will, we fear, debar the average student purchasing it as a mere adjunct to his necessary text-books.

The Atlas does not appear to us to be in any way suited, as suggested by Sir Halliday Croom in a preface, for tutorial-class use. If the tutorial class is to fulfil its function it must afford every student ample opportunities of handling and making himself familiar with pelves, normal and abnormal, be they real pelves or casts; he must study prepared dissections of the organs of generation. Again, when it comes to demonstrating labour and gestation to a tutorial class, we feel sure that whatever admits of photographic representation will be more satisfactorily demonstrated by the aid of lantern slides than by such a series of photographs as the present, for the very obvious reason that the lantern slides can be demonstrated to the whole tutorial class at one time.

Whatever sphere this Atlas may occupy we feel certain that its main use must be as an aid to individual study.

Transactions of the Glasgow Obstetrical and Gynæcological Society. Volume V. Sessions 1904-5, 1905-6. Pp. xx.+ 247. Glasgow: Alex. MacDougall, 68 Mitchell Street. 1908.

In this volume the transactions of the Glasgow Obstetrical and Gynæcological Society for two sessions (1904-1906) are given, and they include many interesting papers and case records. Among the numerous subjects dealt with are extra-uterine pregnancy, ovarian pregnancy (a case by Dr. J. K. Kelly and Dr. Louise M'Ilroy), uterus didelphys, uterine prolapse in a virgin (by Dr. Stark), the treatment

Digitized by Google

of endometritis, chronic inversion of the uterus, persistent occipito-posterior positions, purpura hæmorrhagica neonatorum, and resuscitation of the apparently still-born. Not the least interesting part of the book is that dealing with the specimens exhibited at the monthly meetings, regarding many of which one would have been glad to have had more detailed accounts. Good work in obstetrics and gynæcology is undoubtedly being done in Glasgow, but it seems a pity that, through the system of publishing adopted, the transactions of session 1904-5 should not appear until 1908.

Chirurgie Oto-Rhino-Laryngologique (oreille, nez, sinus de la face, pharynx, larynx, et trachee). By GEORGES LAURENS. Pp. 976. 471 Illustrations. Paris: G. Steinheil. 1906. 30 francs.

THIS bulky volume is divided into five books; though so large, it is not a text-book of diseases of the ear, nose and throat, but is only concerned with operations on these organs. The introduction contains short accounts of the methods of illumination, anæsthesia, asepsis and hæmostasis; under the last heading we find a description of the author's ingenious method of aspirating blood from wound cavities during the course of operations. The first book contains an account of the methods of examining the ear and treating its diseases; the author lays stress on the necessity of the aural surgeon being thoroughly acquainted with general surgical principles and methods. As an example of the style in which the book is written we may take the section on Paracentesis of the Tympanic Membrane—the indications for the operation are first given, next the methods of disinfecting the field of operation and producing local anæsthesia are described; the position of the patient, the instruments required and the mode of operation are fully explained, and finally the difficulties, dangers and after-treatment are dealt with. Six excellent drawings illustrate the points mentioned. Many operations are fully and carefully described, though they are condemned as useless or dangerous; this certainly makes the volume very complete though it adds greatly to its length. The sections on the operations for Mastoiditis, Suppuration in the Labyrinth, and Intra-cranial Complications following Purulent Otitis Media are clearly described and well illustrated. Laurens is in favour of the trephine for labyrinthine surgery, and believes in opening temporo-sphenoidal abscesses through the mastoid wound by removal of the roof of the meatus and antrum and part of the squama. The Surgery of the Facial Nerve is considered, though the author, like most

Digitized by Google

others, is not enthusiastic concerning the results of uniting the facial to the hypoglossal or spinal accessory.

Book II. contains the Surgery of the Nose. The submucous, or, as the author calls it, the "subperichondrial," resection of the septum is rightly attributed to Peterson; but, although the operations of Krieg and Bönninghaus are described, the more recent method associated with the name of Killian is not dealt with. Some of the diagrams in this section, notably those illustrating operations on the turbinals, are so excellent as to render the text almost unnecessary.

Book III. deals with the Accessory Sinuses. The author's forceps for resection of the internal wall of the antrum (p. 490) seem specially suitable, and the opening, as shown on page 495, is certainly much larger than that usually made; the results obtained by Laurens in this operation are given on page 503. Killian's operation on the frontal sinus is in small print, and is rather inadequately described; thoughout the book the work of German writers hardly meets with the attention it deserves.

Book IV., on the subject of the Surgery of the Pharynx, is hardly up to the high standard of the preceding parts; there is a tendency to repetition, and some of the descriptions of the procedures necessary before operation and of the technique are rather diffuse. The illustrations of the removal of adenoids are specially good, and the list of instructions given to the parents of the children operated on (page 631) is most useful. Laurens seems to favour removal of naso-pharyngeal fibroma by the natural passages, though he points out that it is only suitable in selected cases. The operations for pharyngotomy are fully described and illustrated.

In Book V. we have the Surgery of the Larynx and Trachea, including a description and illustration of Killian and Kirstein's method of examining the larynx, trachea and bronchi. Intubation and tracheotomy are described, and their advantages and disadvantages explained. Laurens is in favour of chloroform anæsthesia for the latter operation. In the section on Thryrotomy the method of uniting the divided cartilage is not as fully given as one would expect. In regard to laryngeal tuberculosis the author agrees with Moure in being pessimistic in regard to the value of surgical interference. Thyrotomy and excision of the larynx are fully described and illustrated, and the author's results recorded along with those of other operators.

The book as a whole is well written; it is clearly printed on good paper and, as before mentioned, the illustrations are both numerous and excellent. The work is published in paper covers at a remarkably low price, and is sure to prove of great value to all specialists and to many other surgeons.

Digitized by Google

A Manual of Diseases of the Nose, Throat and Ear. By E. B. GLEASON, M.D. Pp. 536. 260 Illustrations. Philadelphia and London: W. B. Saunders Co. 1907.

A GOOD short manual containing an account of the diseases of the nose, throat and ear and their treatment is certainly required, but this book does not supply the want. The illustrations are somewhat old-fashioned, and are too much concerned with instruments; they often fail to explain the anatomy and pathology or to simplify the operative procedures. The author is evidently a great believer in the medical side of the specialty, and urges the use of sprays, vapours, and lotions when operation is usually considered necessary. Some of the solutions used in the nose seem very strong, *e.g.* silver nitrate, grs. 60 to ℥i (p. 185). In the section dealing with deviations of the nasal septum all the old evil operations necessitating the use of intra-nasal splints are fully described, though nothing is said about the bad effects of this method of treatment, *e.g.* tonsillitis and otorrhœa. Adrenalin is in great demand in the treatment of laryngitis, as elsewhere in the book; but, strange to say, the solutions of cocaine recommended for use in the larynx are much too weak. Simple tumours of the larynx only occupy four pages, and laryngeal paralysis five pages, while myringitis—the existence of which is now disputed—occupies four and a half, and diphtheria—which is fully dealt with in text-books on medicine—takes up eleven. The section on the ear is distinctly in advance of the others and the account of tuning-fork tests is good: too much space is given to diseases of the auricle and meatus, but chronic middle-ear catarrh, tinnitus, &c., are well described. Gleason is rightly sceptical as to the value of syringing in cases of otorrhœa, at least as carried out by the patient's friends. The treatment of suppurative ear diseases is much too conservative, and the sections on acute and chronic mastoiditis are not clear. The intra-cranial complications of ear disease are quite inadequately dealt with—the symptoms of cerebral and cerebellar abscess are hardly mentioned, and lateral sinus thrombosis is dismissed in one and a half pages. Deaf-mutism is not mentioned, but at the end of the book we find forty-two pages occupied by prescriptions, whereas the whole subject of the "larynx" is only allotted sixty-two pages. The book is well bound, and is easy to hold.

A good deal of quiet amusement can, however, be got out of this volume: thus the causes of frontal sinus suppuration are given as—closure of the infundibulum, traumatism, gonorrhœal infection, maggots in the nose, syphilis and tumours; influenza is not mentioned. "Semi-occasionally" appears a curious word to British readers. Scirrhous tonsils are said to be characterised by a "canalicularisation of the

Digitized by Google

blood-vessels." On page 224 we have a picture of spasm of the glottis in which eight tracheal rings can be seen, and on page 267 we are told that "hearty suppers and lunches at bed-time should be avoided." High tracheotomy is described as "opening the trachea through the crico-thyroid membrane," and it is little wonder that Gleason regards the low operation as "preferable."

Preventable Blindness. By N. BISHOP HARMAN, F.R.C.S. Pp. 109. London: Baillière, Tindall & Cox. 1907. Price 2s. 6d. nett.

THE title of this small volume is somewhat misleading, for it deals exclusively with one condition, namely, *ophthalmia neonatorum*. The author states in his Preface that he has "sought to set out in a fair and consecutive order an account of a disease of the utmost importance, as much from the point of view of the social economist as from that of the surgeon. The whole narrative is in the nature of cumulative evidence to enforce the necessity for action by the State."

Throughout the book many of the interesting and useful data given, and the valuable suggestions made, are, no doubt, new to the lay economist, but quite familiar to the ophthalmologist, with the exception of the author's own statistics. One has really nothing but praise to offer but for the fact that the author makes free with the English language here and there, *e.g.*, on page 31, "The eyes of every new-born babe are clean and *wholesome* . . . the clear transparency of the front of the eye is threatened with *disorder* . . . an object of *loathing* to those who see it." At page 40 we find . . . "a *dirt* organism . . . and the left eye would be for a longer time in the *filth*." Again, at page 69 we find . . . "it is decomposed by the pus, and adds a myriad of minute foreign bodies *to the stew*."

As regards treatment, we observe that the author has no faith in collargol and argyrol, and that he prefers the old preparation of silver —the nitrate. To say that argyrol is of no use in the treatment of ophthalmia neonatorum is inaccurate.

Compulsory notification is advocated, but compulsory prophylaxis would be more efficacious in averting the dangers incident to this disease, and in reducing the high percentage of blindness caused by it.

Anyone, who is interested in social economics, will find valuable information and data on which to make up a strong case for action on the part of the State by perusal of this small volume, and we heartily recommend it.

Digitized by Google

THE SCOTTISH MEDICAL AND SURGICAL JOURNAL.

Editorial Notes and News.

The late Dr. Underhill. DEATH has been very busy among the senior ranks of the profession, and Dr. Underhill's is the third name we have had to remove from our title-page since December. He was one of the most active promoters of the *Journal*, and his wise counsel was often sought and always valued. Although his judgment on general matters of professional conduct was regarded as final, it was more to his example than his precepts that Underhill owed his influence. He was the Nathaniel of the profession. The younger generation looked on him as the *beau ideal* of a practitioner.

He came to Edinburgh a stranger; he died the President of the College of Physicians, probably the most respected and certainly the best beloved of the profession, and he sleeps his last sleep in the peaceful Dean Cemetery in the fitting company of Edinburgh's mighty dead.

Retiral of Sir Henry Littlejohn. NOT by reason of age, for Sir Henry will never be old, but to enjoy the quiet comfort of well-earned rest, the Medical Officer of Health for the City of Edinburgh has resigned his post. To look around beautiful Edinburgh, to think of its cleanliness and healthfulness, to contrast these things with those that were, nigh on half a century ago, and to know the great part that he has played in that transformation, this must be a pleasant thought for Sir Henry. A death-rate reduced almost one half, a great irrigation system of sewage disposal, the infective sick well cared for in a well-appointed fever hospital, the ravages of tuberculosis at last met and grappled with by an effective

Digitized by Google

notification scheme, not to mention the raid on the "rookeries" which is now ancient history—these are the outstanding features of a vast mass of work that has been done, and done largely under his initiative. His *dolce far niente* is well earned.

Who will fill his shoes? No one. You cannot fill the shoes of a Personality. Carlyle said of Matthew Arnold, that "the Lord'll never make a Mathie again." And in a kindlier sense, the Lord will never make another medical officer of health like Sir Henry Littlejohn. The times have changed, and perhaps a new type of man is wanted by the times. The new problems that await solution, perhaps only old problems restated, the care of school children—in a word, the advance of Social Reform, to be welcomed where it is sound and as firmly combated where it is predatory, this is a task requiring the strength and elasticity of youth. He must know the tuberculosis question in all its ramifications, the great and thorny question of the milk supplies, the almost as difficult matter of medical inspection of school children—these and kindred matters will fill his time. A teacher he can scarcely be and give the post its rightful share of attention. Here perforce his career diverges from that of his predecessor, for Sir Henry was a teacher *par excellence*. Long may he live to go in and out among us, the last of that great trio—Sir Robert, Sir Douglas, and his wise and witty self.

The Police Surgeoncy. We are glad to learn that the inevitable rearrangement of Sir Henry's duties is to be made on such sensible lines. The appointment of the Professor of Medical Jurisprudence to the post of medico-legal adviser to the city is so obviously in the interest of all concerned that we particularly welcome it. The city gets the advantage of the opinion of an expert of the first rank, while the professor has at his disposal the means for giving his students that practical instruction which is as essential in medical jurisprudence as in every other department of medicine.

The division of the city into districts for police purposes is also generally approved. Edinburgh has become a great city, and in the interest of efficiency this division is, if anything, rather overdue.

The Late Mr. Annandale. There has been a growing desire that something should be done to perpetuate the memory of the late Mr. Annandale in connection with the Edinburgh School of Medicine, and a meeting was recently held in the Royal College of Surgeons to consider what steps should be taken. The President of the College, Mr. Cotterill, occupied the chair, and there was a large attendance and a very large number of letters of apology cordially

Digitized by Google

approving the project. The meeting appointed a committee to deal with the details, but the general feeling was in favour of, first, a bust of Mr. Annandale to occupy the niche which has so long stood vacant in the theatre in which he operated; second, a photogravure portrait to hang in the corridor of the Infirmary in the neighbourhood of the wards in which he used to work; and, thirdly, a medal, called the Annandale Medal, to be awarded to the best student of the year in clinical surgery. We have no doubt the response will be a ready one. Mr. Annandale's students are occupying prominent positions all over the world, and all of them, we think, will be glad to have the opportunity of joining in a memorial to their late master. Mr. H. M. D. Watson, C.A., 13 Rutland Square, has been appointed honorary secretary and treasurer to the fund, and to him contributions should be sent.

Anæsthetics.

FEW subjects in medicine have more personal interest to the profession and to the public than that of the production of anæsthesia by the administration of a general anæsthetic. For years the merits of ether and chloroform have been discussed, more especially in reference to their relative safety. Mixtures and sequences of different anæsthetics have been introduced, numerous new anæsthetics have been boomed, spinal anæsthesia has been advocated, all of these with the view of increasing the safety of anæsthesia. The subject is at present very much in evidence, and even the ultra-modern Bernard Shaw has written a foolish letter regarding it. A comparatively new feature in the danger of chloroform administration, termed "delayed chloroform poisoning," has been discovered, so that even when a patient is off the table, and is past the risk of death on the table, he is not wholly safe. This has, particularly in acute septic conditions, given those who favour ether another argument against the use of chloroform. During the last few months much attention has been given to the use of ether by the *open-drop method*, which is largely used in the United States. This method is in high repute at Rochester, U.S.A., in the clinic of the brothers Mayo, and it is interesting to observe that in the report of the St. Mary's Hospital for 1907 ether was given 4575 times, while chloroform was only used on four occasions, and ether and chloroform on twenty-eight. It is well known that in that clinic the anæsthetics are given by lady anæsthetists who are unqualified, in the sense of being non-medical; that no accidents have occurred, and practically, from the anæsthetic, dangerous conditions have almost never, if ever, arisen.

Recently a well-known anæsthetist in London stated that anæsthetics were safe *if* properly administered, and that if a death occurred it was due in nine cases out of ten to bad administration.

Digitized by Google

A sad commentary upon such a statement is seen in a paper by Dr. F. I. Waldo, His Majesty's Coroner for the City of London, in which he states that "the annual reports of the Registrar-General for England and Wales for the years 1902, 1903, 1904, 1905 and 1906 give a total mortality of—1902, 148; 1903, 146; 1904, 154; 1905, 155; 1906, 183: total 786, or an annual average of 157·1 deaths." Dr. Waldo then points out that large as this mortality is, it is statistically incomplete and misleading, as the notification of the cause of death from an anæsthetic is in effect not compulsory, and that to avoid publicity it is only natural that, when it is possible, deaths due to anæsthetics are not reported as such. He further says that as regards Scotland it is "safe to conclude that the Registrar-General's figures for 1902, 1903, 1904 and 1905 understate the actual facts of the case." This conclusion we think quite likely to be erroneous, as there is an enormous difference in the administration of anæsthetics in Scotland as compared with England, as Mr. Syme long ago very pertinently and emphatically stated. We may ignore this at present, however, as even if Scottish statistics be correct we are still left with those of England admittedly incomplete. Dr. Waldo states that, (1) the so-called statistics and published figures are worthless and misleading; (2) with such imperfect data it is impossible to form any trustworthy conclusions either as to the absolute ratio of fatalities to administrations, or as to the relative proportion of deaths to administrations in the case of particular anæsthetic drugs. These are logical statements, and we must also approve of his last conclusion, viz. that it is highly desirable to arrive at satisfactory conclusions regarding all deaths under anæsthesia, both for the safety of the public and for the furtherance of scientific knowledge. When, however, we read the recommendations made by the medical coroner—for he is a medical man as well as a barrister-at-law—we feel bound to enter our dissent and protest against any such drastic proposals. The suggestion that when a fatal result occurs it should be reported to the authorities and an inquiry be held is a perfectly proper one, but the suggestion that "full details be reported by the anæsthetist of all administrations of anæsthetics, whether in hospital or in private practice, including date, name and address of patient, of operator and administrator, nature of operation, the drug used and other pertinent details," is surely going too far towards interference with the liberty of the subject. It is justifiable to insist that the administrator, or operator, or both be registered medical practitioners, but that should be sufficient. Dr. Waldo in his suggestion has forgotten his medical side and taken exclusively the *rôle* of lawyer. We prefer Dr. Jekyll to Mr. Hyde.

Digitized by Google

What is really wanted in anæsthesia is safety, and this, it is now generally recognised, is dependent mainly upon the administrator, who must, in the first instance, after consultation with the operator or medical man in charge of the patient, choose the drug most suitable for the individual case; and in the second place, administer it in a competent manner. It must be observed, however, that dealing with patients varying so much, as they do, in their vital powers, and with drugs which have such strong effects upon the central nervous system, there must always be danger, and from time to time an accident is certain to occur. Such accidents are absolutely unpreventable in some instances, and our duty is to ensure as far as is humanly possible that *preventable* accidents do not occur. For this purpose it seems to us that the resolution proposed and accepted at the meeting of the Medico-Legal Society on the 24th of March is reasonable and justifiable and should have the support of the profession at large: "That in view of the importance of the administration of anæsthetics, this Society is of opinion that it is highly desirable, in the public interest, that every member of the medical profession, before he is registered, shall have received instruction in the administration of anæsthetics. They therefore earnestly beg the General Medical Council to consider whether they can see their way to include a course of instruction in anæsthetics amongst their requirements in regard to professional education."

Many questions of the greatest interest and of very great difficulty arise in connection with this subject of anæsthesia, as, for instance, who is responsible for the anæsthetic if danger arise? Is it the operator or administrator? It has been decided by a Court of law that the operator is responsible if a fatality occur, but we know that law may be opposed to common sense. We feel that the responsibility rests in practice, when danger arises, with the more dominant of the two men present, but that in reality they are equally responsible. The stronger will cannot help, when time is so important, taking a hand in the endeavour to save life. We have seen both surgeon and administrator stand aside while a masterful assistant did the needful. When all is said and done, however, we must not make too much of the anæsthetic. Given a *well-trained* medical man, with the knowledge which he has of anæsthetics, he will give it (ether or chloroform, whichever he is most accustomed to), without accident, thousands of times. With ordinary skill it is very much nowadays the same risk as going on a railway journey. We accept the risk and undertake the journey. The more, however, medical men are hampered by the thought of coroners inquests and fiscal inquiries, the less willing will they be to take risks, and in the long-run it will be the patients who suffer most.

Digitized by Google

The Research Defence Society.

THE Committee which was formed to arrange the evidence presented to the Royal Commission on Vivisection expired when that duty was performed. So much good resulted from their meetings that it has been decided to form a society to make generally known the facts about experiments on animals, and to bring before the public the other side of a question which is so pertinaciously pushed by the anti-vivisectionists. The society proposes to give information to all inquirers, to publish précis, articles and leaflets, to make arrangements for lectures, to send speakers, if required, to debates, and to assist all who inquire to examine the arguments on behalf of the experiments on animals. The society is not limited to scientists and medical men, and the list shows the names of many prominent public men. The President is the Earl of Cromer, and among the many vice-presidents are Sir William Anson, Lord Avebury, Lord Robert Cecil, Sir Luke Fildes, Mr. Walter Long, Sir Herbert Maxwell, Lord Strathcona, Lord Halsbury, Lord Rosse and Lord Methuen. We are further glad to see the names of many Church dignitaries—the Bishops of Exeter, Oxford, Grantham and North Queensland, the Deans of Canterbury, Ripon, Salisbury and Christ Church, while in the list of members issued appear the names of several ladies distinguished for their public activities. The appeal has hitherto been made in Scotland mainly to the universities, but we trust that it will meet with as much sane, sound support here as it has already done in the south.

The Women's National Health Association.

IRELAND appears to be awakening to the necessity of spreading among the people knowledge of the means by which disease may be prevented. One sign of this awakening was seen in the great interest aroused by the anti-tuberculosis exhibition which was opened in the grounds of the recent International Exhibition in Dublin, and was afterwards taken to Belfast. It was intended that other towns should be visited afterwards, but so successful was the exhibition, and so numerous were the requests for a visit, that it was found necessary to duplicate the exhibition and send a mission simultaneously north and south. The first annual meeting of the Women's National Health Association was opened in Dublin by the Countess of Aberdeen on 14th April, and the large number of persons attending from all parts of Ireland is a further evidence of the spread of public interest in public health and preventive medicine. Her Excellency, in opening the proceedings, said that people might ask whether any real good had been effected by the tuberculosis exhibition or could be expected from meetings such as theirs. To this she could reply that there was already a considerable

Digitized by Google

amount of evidence that good had already been done in various parts of the county. The increase of open windows was remarkable, especially in the poorer parts of the towns which the travelling exhibition had visited. Landlords were receiving applications from tenants for alterations to admit of windows and sky-lights being opened without admitting the rain. Movements are being started for the erection of inexpensive sanatoria. In several places the Poor-law Guardians are considering the addition of special wards for advanced cases of consumption. In Armagh the milk dealers have agreed to have all their cows submitted to the tuberculin test. The Women's Health Association has engaged two Jubilee nurses to devote their attention to tubercular patients who are attending dispensaries or hospitals in Dublin. These nurses are fully trained, and have had the opportunity of spending some weeks at the Victoria Dispensary in Edinburgh.

The great interest aroused by the tuberculosis exhibition is to be explained by the great amount of tuberculosis which exists in Ireland. It was felt by those in charge of the exhibition, and by those who gave lectures in connection with it, that a considerable proportion of the visitors had relatives or friends who had suffered from the disease. The present awakening of the Irish "health conscience," however, has naturally led people to see that work is needed in other directions than the prevention of tuberculosis. In Ireland, as elsewhere, the infantile mortality continues to be distressingly high. Amongst efforts to counteract this we find that there has been established in Belfast an association for the visiting of young mothers on the lines of the School for Mothers at St. Pancras. We are particularly interested to learn, also, that Mr. Nathan Strauss, who has done so much to improve the milk supply, and thus to reduce the infantile mortality, in New York, is about to present to Dublin a pasteurised-milk laboratory. Mr. Strauss is sending his physician from New York to assist in inaugurating the system in Dublin.

Amongst other work which has been effected may be mentioned the engagement by the Gaelic League of Dr. Shamus O'Berin to deliver health lectures in Irish in Irish-speaking districts in the west of Ireland.

The association already has branches in many parts of Ireland, and the progress which has been made in the short period of the association's existence is regarded as highly gratifying.

Digitized by Google

EDINBURGH UNIVERSITY MEDICAL PASSES.

The following is the Official List of Passes in the recent professional examinations for degrees in Medicine and Surgery :—

FIRST PROFESSIONAL EXAMINATION.

Herbert F. W. Adams; G. A. Melville Anderson; Sidney H. Arthur; Madan Mohan Lal Atal; Clement C. Cafferata; Samuel B. B. Campbell (with distinction); William J. Candlish; Peter W. Carruthers; Allan L. Christie; Asher Cohen; Frank Eley Crew; James H. Cuthbert; Thomas C. Dallas; John P. Davidson; Frederick B. Dreyer; Harry Evans; Stanley Fenwick; Margaret Ferguson; John Gifford (B.A.); John G. Gill; William L. Glegg; Robert A. Greenwood; John W. C. Gunn (M.A.) (with distinction); Mary I. Hemingway; James A. Henderson; Herbert D. M. Imrie; William N. W. Kennedy; A. Mirza Raza Khan; Maurice B. Lawrie; Harry Lewis; George J. Linklater; Stanley J. Linzell; Joseph M'Caig; Peter M'Cowan; William Macdonald; Eric F. W. Mackenzie (with distinction); Henry M. M'Kenzie; William S. M'Laren; George G. Marshall; James Maxwell; Walter Mercer; Hugh S. Palmer; Hugh F. Penman; Francis G. Power; William A. Rankin; Archibald Romanes (M.A.); William Rose (M.A.); William J. Rosie; James N. M. Ross; Agnes Rothé; Mossie Rougvie; William M. W. Shepherd; Alan W. S. Sichel (B.A.) (with distinction); John T. Smeall; William R. Stewart; James R. K. Sutton; Meyer Teitelmann; Garth ap Thomas; Ruby Thomson; John S. Tomb; Benjamin Weinbren; Harry Whitaker; Arthur R. Wightman.

SECOND PROFESSIONAL EXAMINATION.

Old Regulations.

Major George Bidie, I.M.S.

1892 Ordinance (Three Subjects).

Peter Allan; Francis G. Bell; Walter Bisset (M.A., B.Sc.); Uriah F. F. Brown; George R. Bruce (M.A.); Gilbert Burnet; Joseph le F. C. Burrow; Walter W. Carlow (M.A.); William Darlington; Wilfred J. Feltham; Annie G. Fergus; Eion L. Ferguson; John B. Ferguson; François P. Fouché; Robert W. Greatorex; Edward B. Gunson; Thomas E. Guthrie; Hugo F. G. Hall; W. R. Clayton Heslop; John Honeyford; Alfred E. Huckett; Gideon J. Joubert; Thomas D. Kennedy; David T. M. Large; John P. Litt; John M. Logie; A. Sinclair Loutit; D. Murray Lyon; Wilfred V. Macaskie; Thomas M'Fetridge; John R. M'Gregor; William Macnaughton; Ram C. Malhotra; Sesi Marshall; Daniel B. Maunsell; William A. Miller; B. Branford Morgan; Olivier A. J. N. Muriset; Harry G. G. Nelson; Pieter J. Olivier; Dora E. Paterson; Peder N. Pedersen; Stanley Pinion; Stephen H. Pugh; William D. Reid; Christopher Rogers; William A. Shafto (with distinction); Fraser M. Sinclair; John Stevenson; Claude B. Tudehope; Stephen H. Wilkinson; Guy A. Wyon (B.Sc.).

New Ordinance (1907) (Two Subjects).

Robert M. Allan; Charles J. G. Bourhill; George S. Brock; J. Falconer Brown; Ernest H. Cameron; John Drummond; Francis R. Fraser (B.A.);

Digitized by Google

Alexander Hood; John Hunter; Eric C. Lang; Robert S. Lawson (M.A.); Emilius C. Mackay (M.A.); Philip W. Maclagan; Donald J. M'Laren; Robert D. M. Macpherson; Duncan F. Macrae; Norman F. Mann; Horace M. Mills; Archibald A. Morison; Duncan M. Morison; Malcolm M. Morrison; Montgomery P. Paton; William C. Paton; James F. Penman; A. Z. Philips; Charles K. Pole; Allan H. Porter; Nicholas Purcell; Alexander W. Rattrie; Thomas C. Ritchie; William Russell; Thomas R. Sandeman; Austin N. Smith; James R. Stott; James Taylor; John J. Tough.

THIRD PROFESSIONAL EXAMINATION.

D. C. Adam; David Aiken; R. J. Allsopp; Alexander Archibald; Fergus Armstrong; Alice E. M. Babington; T. H. Balfour; A. E. C. Beausoleil; R. A. Bell; Eveline R. Benjamin; W. M. Biden; T. C. Borthwick; F. A. J. Brodziak; G. S. Brown; A. Ninian Bruce (B.Sc.); P. J. de Bruijn; W. F. Buist; O. S. Bulloch; W. L. Burgess; B. N. Burjorjee; A. W. Burton; Sarah E. Buyers; J. Argyll Campbell; John Cathcart; G. L. Cawkwell; A. D. Child; H. A. Cookson; N. A. Coward; James Crocket; Lucy E. Davies; J. K. M. Dickie; I. D. Dickson; Adelaide A. Dreaper; J. W. C. Drever; A. E. Drynan; A. M. Elliott; A. H. Elmslie; G. F. Fismer; Thomas Fraser; E. L. Galletly; Mary M. Gardner; A. W. Gill (with distinction); T. J. Gilmore; W. E. Goss; W. T. Graham; A. G. M. Grant; R. D. Latimer Greene; S. C. Sen Gupta; A. G. Hamilton; H. F. Hamilton; R. C. Harkness; T. E. Harwood (B.A.); John Henderson; G. R. Inglis; Flora Innes; G. E. King; Lina Kurz; J. H. Lawry; Harry Lipetz; W. R. Logan; H. A. V. Loots; H. F. Lumsden; D. C. Macaskill (M.A.); J. C. MacCallum; D. R. C. Maclagan; G. E. G. Mackay; J. M. M'Keand; Donald M'Phail; R. C. Macqueen; John Malloch; T. H. R. Mathewson; William Messer; E. L. Middleton (with distinction); A. F. W. Millar; G. M. Miller; A. M. Minford; L. M. V. Mitchell; John Montgomery; S. P. Moore; William Morrison; J. A. Mortimer; J. M. Moyes; C. C. Murray; R. M. Nicholson; F. H. Noronha; James Oag (M.A.); John Renwick; D. G. Robertson (with distinction); W. S. Robertson; D. M. Ross; William Ross (M.A.); R. P. Rosser; A. C. Russell; C. M. Schaffter; Jessie A. Scott; J. J. M. Shaw (M.A.); J. C. Simpson; Kerr Simpson; G. H. Sinclair; J. D. Skinner; H. F. Smith (B.A.); J. G. Smyth; James Sprent (B.Sc.); William Stevenson; William Stewart; C. P. A. Stranaghan; James Swan; A. L. Taylor; H. W. Teague; J. A. Thompson; L. R. Thomson; W. S. Thomson; N. J. Watt; J. P. Whetter; Seymour Williams; John Wilson; J. D. Wilson (with distinction); Margaret C. Young.

Royal College of Physicians of Edinburgh, Royal College of Surgeons of Edinburgh, and Faculty of Physicians and Surgeons of Glasgow.

THE quarterly examinations of the above Board, held in Edinburgh, were concluded on 16th inst., with the following results:—

First Examination, 4 Years' Course.—Mr. Thomas Gray, Dumfries, passed the examination.

First Examination, 5 Years' Course.—Of 33 candidates entered the

Digitized by Google

following 16 passed the examination:—Stanley Dermott Large, Larne; Ibrahim Ladhabhai Asrani, Bombay; William Forsyth Gibb, Dundee; James Remers, Manchester; William Charles Davis, Belfast; Percy Ward Laidler, Gateshead; John Morrison Milne, Dundee; Donald Saunders Graham, Lisbellaw; Bhaskar Mahadev Tembe, India; Devarayadoorg Venkata Giri, India; Arthur Butterfield, Oldham (with distinction in Chemistry); William Woodthorpe Williams Watt, Aberdeen; Edgar Annequin, Mauritius (with distinction in Chemistry); John Nichol Clerk, Yorkshire (with distinction in Chemistry); Clement Montague Bradley, Birmingham; and Matthew M'Lintock Bainbridge, Kelso; and 1 passed in Physics, 4 in Biology, and 5 in Chemistry.

Second Examination, 5 *Years' Course.*—Of 20 candidates entered the following 9 passed the examination:—Morris Greene, Russia (with distinction); Charles Langley Ievers, Co. Clare; Robert Eric Noel Martyn-Clark, Punjab; Patrick Walsh, Co. Limerick; Richard Antony Mirzan, Smyrna; Gordon Beveridge, Scotland; Leon Galdemar, Mauritius; Archibald Campbell Tait, Newfoundland; and Henry Gilbert Lamberty, Mauritius; and 2 passed in Physiology.

Third Examination, 5 *Years' Course.*—Of 26 candidates entered the following 13 passed the examination:—Sydney Granville Tibbles, Nottingham; Robert William Axon Brown, Chester; Thomas Walsh, Ireland; Walter Crosse, Liverpool; Daniel Murphy, Kerry; Stanley Welton Hogg, Sydney; Ruttonbai Cooverjee Nazir, Bombay; Abhayabala Singha, Amritsar; Ethel Amy Mordaunt, London; Isabel Pulteney, Ashley; William Clair Leonard Malone, Melbourne; Richard Fraser Lunn, Edinburgh; and Devarayadoorg Venkata Giri, India; and 1 passed in Pathology and 2 in Materia Medica.

Final Examination.—Of 47 candidates entered the following 22 passed the examination, and were admitted L.R.C.P.E., L.R.C.S.E., and L.F.P.&S.G.:—James Haig Johnston, Fifeshire (with honours); Alexander Duncan Falkner, Canada; Gajanan Jinabhai Mahimtura, Bombay; David Lawrence Luckhoo, British Guiana; Millicent Vere Webb, Warwickshire; Mahlon William Locke, Ontario; Thomas Bertram Eames, Manchester; Dwarkabai Wassantrao Kamalakar, Bombay; Ruttonbai Cooverjee Nazir, Bombay; Charles Austin Paterson, Rio de Janeiro; Robert Wylde Pickup, Duckinfield; Vincent Sylvester Delany, Longford; Michael Joseph Hayes, Cork; Harry Stokes, India; Edward Lewis, N. Wales; Leo Patchett, Lancashire; Krishnarao Ganpatrao Dhairyawan, Bombay; Aiknath Viswanth Bam, India; Arthur Melville Davie, Glasgow; Jacobus du Toit Malan, Cape Colony; Adeline Mercy Watts, India; and John Bowman Cooke, Liverpool; and 3 passed in Medicine, 6 in Midwifery, and 4 in Medical Jurisprudence.

Digitized by Google

ON THE FROZEN SECTIONS BY BUMM AND BLUMREICH, AND BY ZANGEMEISTER—IS THERE A LOWER UTERINE SEGMENT?

By A. H. F. BARBOUR, M.D., LL.D.

III.

WE come now to the criticism of the position taken up by Bumm. And first we note that their case was that of an elderly primipara, the patient being aged 39, which may account for the extreme thinning of the cervix, to be referred to later on. Also, it was a case of partial placenta prævia, the placenta extending as far as what Bumm describes as the os internum (certainly in part over the lower uterine segment), which accounts for the hæmorrhage during the first stage.

Two points are raised in their paper—(1) The position of the retraction ring; and (2) whether there is a Lower Uterine Segment in addition to the stretched cervix. With regard to the first point, they rightly draw attention to the bulgings of the uterine muscle produced by depressions on the contained fœtus—a point which I drew attention to,[1] contrasting the difference between the behaviour of the uterine wall in the first and second stage—that in the first stage it moulds itself on the surrounding bony parts, while in the second it moulds itself on the fœtus. That the retraction ring always develops at the os internum I do not concede, because there is just as strong evidence in my own section, as we shall see immediately, that it has developed at a higher level as there is in their case that it has developed lower down. The main point at issue, however, is the character of the lining of the stretched portion of the canal, and we proceed therefore to a comparison and criticism of the micro-photographs of the two sections.

Criticism of Micro-Photographs.

The micro-photographs of the cervix from their Atlas and mine laid side by side form an interesting contrast.

As regards the anterior wall, the utero-vesical reflection of the peritoneum—one of the marks of the os internum—corresponds to the lower border of the placenta in their case, while in my own

[1] *British Medical Journal*, 1890, vol. ii. p. 1055.

Digitized by Google

it is some distance below it; and the fact that there was hæmorrhage in the first stage shows that it was a case of marginal placenta prævia, the placenta being situated over what of recent years has been described as the Lower Uterine Segment. Measuring the length of the anterior wall of the cervix in the micro-photograph of their section from the point where the cervical glands begin, a point 2 in. below the edge of the placenta, we find it to be 18 in., and as the enlargement is 8½ times, this makes the cervix 2·2 in. long anteriorly. In my case the cervix measures 12 in. in the micro-photograph, which, divided by 7, gives 1·7 in. The difference between the length of the cervix anteriorly in their case and mine *is only* 0·5 *in.* Corresponding to this greater length of cervix in their case is a greater thinness. The thickness of tissue in their case is from one-half to two-thirds that of mine, though the enlargement is greater as 8½ to 7.

The comparison of the micro-photographs of the posterior wall is still more instructive; and I agree with Bumm and Blumreich that the question can be settled more definitely by reference to the posterior wall, because the absence of the placenta allows the retraction ring to be well developed, and the anatomical landmarks are more definite. That we may be able to compare the two, I place side by side a reproduction of the micro-photographs of the two sections, reducing them to the same scale—twice the size of the preparation (see Plate III.). Bumm and Blumreich maintain that the adherent membranes described in my section as above the os internum were an artificial product, and they give a microscopic section to show how the condition of growing membranes may be simulated by stuck-on membranes. To show that the membranes in my section were not "stuck on," I give enlarged photographs taken from the places marked in the micro-photographs (see Plate IV.). I have gone over my microscopic sections and had fresh micro-photographs taken from the actual sections to clear up the point in dispute. From these it is evident that the wall was here covered with decidua and chorion, and that the decidual tissue is not applied to, but growing from, the underlying muscular wall.

It is noteworthy, as explaining the greater length of cervix (3·7 in. in theirs as against 1·3 in. in my section), that the thickness of the cervical tissue in their specimen varies in its lower two-thirds from 0·8 in. to not more than 0·4 in.; or, allowing for the

Digitized by Google

Plate III.

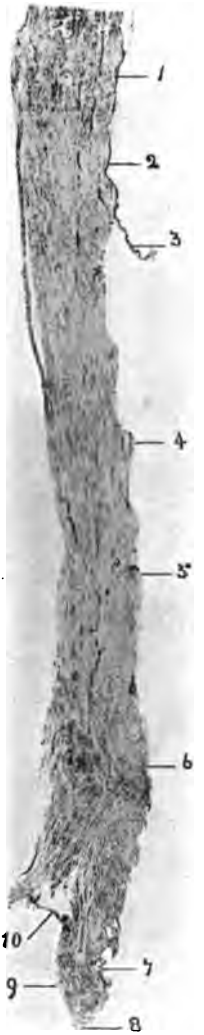

Fig. 1.

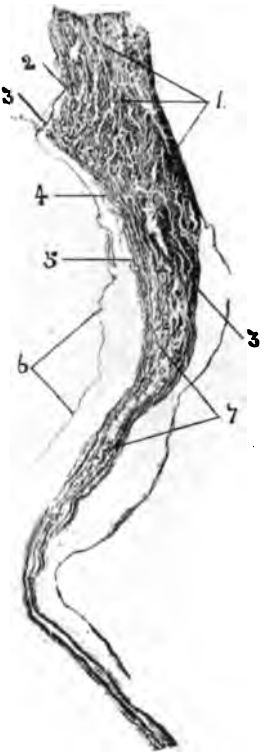

Fig. 2.

Digitized by Google

Digitized by Google

PLATE IV.

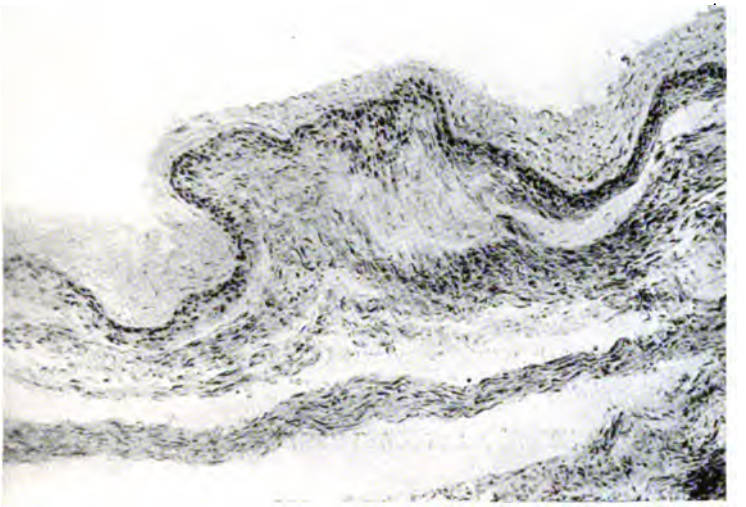

Fig. 1.

Fig. 2.

Digitized by Google

Digitized by Google

10 times enlargement, the tissue can only be 0·04–0·08 in. in thickness. In my micro-photograph, on the other hand, the thickness of the cervical tissue averages 1·2 in. throughout (except at the tip of the cervix) which, divided by 7, gives 0·17 in. That is to say, the posterior wall of the cervix is three times as thick in my specimen as in theirs. May not the explanation of the greater length of cervix in their case be found in its greater thinness? We have here almost the "gold-leaf cervix" of Bandl—a cervix only 0·04 in. thick at one point.

As explaining their position, let me further quote from the text of the Atlas dealing with the significance of the findings:—"As we found the distinct characteristics of cervical mucosa in every part of the stretched zone, we were obliged to conclude that the whole of the stretched part of the wall of the genital tract in the preparations described, from the os internum up to the retraction ring—that is, to the lower margin of the placenta—belonged to the cervix; and there was nothing anywhere to indicate that it was made up in part by a portion of the body, in the form of a lower uterine segment.

"There has been no functional division here of the musculature of the uterus—that is, in the sense that at the onset of labour only the upper portion of the body pulled itself (actively) together while the muscular wall of the lower segment became stretched and flaccid. In our opinion there is never any such functional division, but rather a contraction of the muscles of the whole uterus—in the cervix, lower segment and fundus alike."

After explaining what "retraction" implies, they state that—"There is, however, also an opposite kind of displacement in which the fibres are pulled out, and there is a stretching and thinning of the wall. We call this kind of displacement 'distraction.'

"Differences in the arrangement of the muscular fibres in the body and cervix account for the different kinds of muscular displacement brought about by contraction, and lead to an intertwining of the fibres in the body, and to a pulling apart of those in the cervix. The greater part of the muscular work of the uterus during labour is spent in the retractile and distractile displacements of the fibres, the thickening of the walls of the body and in the stretching of those of the cervix."

This suggests the following criticism. While in their specimen a retraction ring is seen about ½-in. above where cervical mucosa

Digitized by Google

begins, the evidence is just as conclusive that in my specimen the retraction ring was from 1½ to 1¾ in. above a similar point. Further, does this "distraction," by which I suppose is meant the separation of its muscular layers as the cervix is dilated, not affect the lower pole of the uterus as well as the cervical canal? The os internum, along with the part immediately above it, undergoes physical changes analogous to those of the cervix and which the rest of the uterine wall has not to undergo to allow the uterine contents to escape.

Looking now at the membranes in the posterior wall (see Plate III.), their section shows what they describe as "losgelöste Eihäute." Is one justified in speaking of the membranes as "losgelöst" when the assumption is that they have never been attached? The area from which these membranes have come is covered with "typische Cervixdrüsen." And, as far as I understand their position, it is this, that cervix remains cervix to the end of pregnancy; that there can be no union of membranes to an area covered with cervical mucosa; and that this point of view is confirmed by the section they give of a pregnant uterus from the ninth month, before labour has set in, in which the membranes are separated from the surface of the cervix by a layer of mucus. My section, on the other hand, shows a raw surface without cervical glands from which the membranes have been detached. This raw surface is produced by torn-through decidua.

It is also interesting to note that Bumm and Blumreich had difficulty in saying whether the glands which they label "cervical glands" were cervical glands. I quote from the text of their Atlas.

"The sections of glands from the 2 cm. broad zone immediately below the retraction swelling were, however, found to be quite different in appearance. Here it is a case of round, or long, but never acinous-shaped interstitial spaces, which, while also having a cylindrical epithelium with basal nuclei in the narrower parts, possess a cubical epithelium in the walls of the larger spaces (Plate VII., Fig. 5). *We had then to ask ourselves whether we had not perhaps after all in these structures glands belonging to the body.* What led to a decision was the preparation of a pregnant uterus from a woman who died from hæmoptysis about five weeks before her expected confinement without pains having been felt. When the hardened preparation was cut through sagittally it was seen

Digitized by Google

that the upper part of the cervix had dilated into a funnel-shaped structure; the length of the part of the cervix which had not dilated amounted to 2·6 cm., while the dilated part measured 17 mm. in front and 13 mm. behind. An exact reproduction of the conditions of this funnel-shaped dilatation is given in Plate VII., Fig. 1. This represents a section through the anterior wall, which shows that the membranes are attached firmly to their decidual lining as far as the edge of the funnel, but are, on the other hand, separated from the mucous lining of the funnel by a layer of mucus. The whole of the mucosa in the funnel is covered with a superficial epithelium which is absolutely intact, and which extends even for some distance beyond the funnel on to the under side of the membranes stretched over the funnel."

It is interesting, after reading in the paper that reference to the uterus in pregnancy is out of court, and that the matter must be settled by an appeal to the frozen section of the *second* stage alone, to find a reference to a uterus at the ninth month of gestation to clear up the question of the nature of the glands. And are such changes in the glands not inconsistent with the thesis, "cervix bleibt cervix?"

I do not wish to call in question their anatomical data. I think that it simply confirms the thesis that the explanation of the different conditions found in their preparation and in mine lies in two factors—(1) that there was a difference in the condition of the upper part of the cervical canal before labour set in; and (2) that, though there was apparently no obstruction to the progress of the head for some reason (perhaps because the patient was an elderly primipara) the posterior wall of the cervix became three times as thin in their case as in mine, associated with which thinning there was a corresponding increase in length. To put my position in a nutshell: if you have before labour a cervix such as was found in Waldeyer's Section, then you will have in the second stage a cervix such as was found in my case; if, on the other hand, you have a cervix such as they describe, and which has been described by others as present during the last weeks of pregnancy (however it be produced), then you may have in labour —provided the cervix becomes unusually thin—a cervical canal such as is found in their section.

The length of the cervix in the second stage is conditioned by the anatomical relations before labour begins, just as much as by

Digitized by Google

the amount of resistance during it. And a retraction ring may develop at some distance above the cervical canal, as my section shows.

It may be said that by assuming a different state of affairs before labour begins in the two preparations one is only shifting the difficulty a stage further back. Precisely so. And that is why I do not think that in studying the question of the lower segment we can disregard all the work that has been done on the cervix during pregnancy. The result of that work has been to show that in different specimens different conditions are found. As to what is the normal we are not in a position to state. And to ask what is normal is futile. All we can ask is, What is the condition that most frequently obtains?

The weakest position in Bumm's paper is when he states, One of us must be wrong." It recalls the discussion as to how the placenta presented—Schultze holding that it was by its centre, Duncan that it was by its edge. Further inquiry showed that both were right, the presentation being determined by the position of the placenta in the uterus.

In conclusion let me say that we must revise our ideas with regard to the lower uterine segment to this extent. (1) The firm attachment of the peritoneum can no longer be taken as defining its upper limit: abdominal section for hysterectomy shows that the loose attachment of the peritoneum extends much higher up than was held 20 years ago. (2) The lower uterine segment may be defined as that part of the uterus which must be converted into a canal so as to allow the fœtus to pass. It corresponds to rather less than a fourth of the total cavity of the uterus. (3) This part of the uterus, by pressure of the contents, has its muscular bundles opened up so that it contracts less efficiently when labour sets in. Whether the retraction ring forms at the os internum, as it may do in some cases, or higher up, will depend on the contractile efficiency of the musculature. (4) There must always be a raw surface in the uterus corresponding to the area from which membranes are detached in the formation of the bag of membranes. It is of course possible that the bag of membranes may be formed by the chorion splitting and a hernial protrusion formed of the amnion alone, but if the chorion enters into the formation of the bag, then the decidua must also; and this means a stripping of decidua off the uterine wall. I should be more disposed to define the lower

Digitized by Google

uterine segment in terms of the possibility of the uterine muscle being less efficient in this area and the fact that the membranes are stripped off this area, than in terms of any anatomical characteristics. The retraction ring is where the retracted area ceases.

Further, no discussion of the lower uterine segment is valid which does not take into account all the facts which have been brought forward as the result of 20 years' work on this subject. And, to return to the illustration with which we began, the death certificate is not in order, and the funeral must be postponed, for there is more life in the lower uterine segment than Bumm and Blumreich admit.

IV.

Note on Zangemeister's Section.

This is the third frozen section from rupture of the uterus with the fœtus *in situ* which has been published, the others being by V. Mars and Zweifel,[1] and it is the most instructive of the three. In V. Mars's Section more than half of the trunk and lower extremities are in the peritoneal cavity, and the empty uterus lies to one side. In Zweifel's Section the child's head was born, and there is uncertainty as to whether the rupture was *ante* or *post mortem*. In Zangemeister's case, on the other hand, only a small area of the fœtal head lay exposed in the peritoneal cavity. The section has this further value—that, by making use of a coronal section, the lateral relations of the uterus, which are of special interest here, have been exposed.

The patient, aged 29, was a primipara. After the onset of pains she continued at her work till 10 A.M., when she called in a midwife. At 6 P.M. the membranes ruptured, the os being the size of a two-shilling piece. At 5 A.M. next day she sent for a doctor, who found a transverse presentation, the right shoulder deep in the pelvis, and the fœtal heart in the middle line. Failing to turn, he called in, at 1.30, another physician, who found the child dead, the lower segment thinned, and the contraction ring standing high and sharply defined. After further efforts at turn-

[1] A case by Pinard and Varnier died from rupture of the uterus *after* the expulsion of the fœtus.

Digitized by Google

ing, decapitation was tried, without success. The patient was therefore sent to the Königsberg Maternity at 6 P.M., which meant a journey by road and rail, and she died half-an-hour before her arrival there at midnight. Two days elapsed before permission was obtained for a post-mortem, which showed a small amount of blood-stained serum in the peritoneal cavity; the fundus 10·4 in. above the pubis; and on the posterior aspect of the uterus to the right side an oval rent 5 in. in diameter, running obliquely upwards and towards the middle line. From the rent protruded a segment of the fœtal head to the extent of about half a hen's egg. The lower corner of the rent was 4 in. (10 cm.) above the deepest part of the pouch of Douglas, while its upper lateral end was 5·6 in. (14 cm.) below the fundus. The greater part of the head lay underneath the peritoneum in the right iliac fossa. Above the head and immediately above the rent the retraction ring could be distinctly seen and felt. As the whole body could not be obtained, the pelvis, and the part of the spinal column above it, was removed with the contents.

The Atlas contains four plates—(1) The coronal section; (2) same showing whole fœtus; (3) posterior and (4) anterior views of genital tract with fœtus removed. The section passes through the acetabula and the anterior portion of the rent. As regards its relation to the genital tract, more and more of the latter lies behind it as it passes downwards. The child is rather short of full-time—35 weeks; the placenta, which was on the fundus, is separated throughout, but there is no hæmorrhage between it and the uterine wall. The pelvis is generally contracted, but only to a slight degree, the conjugata vera measuring 4 in., and the transverse 5 in.

He adopts Aschoff's thesis, that the contracted part of the canal produced by the muscular wall, the os internum anatomicum, does not coincide with the boundary between the mucosa of body and cervix. The retraction ring forms from the musculature situated at the former point. Post-mortem change prevented conclusions being formed as to the mucosa.

There are two longitudinal tears—a small one on the left and a larger one on the right side. The latter begins in the vagina, the walls of which are here 3 mm. thick, extends upwards through the cervix so as to expose the parametric tissue through a rent, the margins of which are 3·6 in. apart. As it passes further

Digitized by Google

upwards, it comes to be more posterior, so that finally it goes through the peritoneum behind the insertion of the broad ligament, stopping short at the retraction ring.

As the term "retraction" is applied to the behaviour of the individual fibres, he suggests that "concentric adaptation" would be a better term to apply to the behaviour of the uterine wall as a whole, *i.e.* "the plastic adaptation of the uterus to the form of its contents." As the outer muscular layers are fixed the inner retract more, which implies a sliding of the internal upon the external layer. This leads to a concentric diminution of the whole muscle—not an eccentric contraction of the wall towards the fundus.

Nor does the position of the retraction ring in the uterine wall change. The upward movement of the retraction ring, which we note clinically, is explained by the fact that the fundus uteri cannot descend as the result of the expulsion of its contents in cases of obstructed labour. A rent may be circular or axial, the latter being due to expansion of the canal by its contents—in this case by the head and breech being forced within the canal already thinned by traction. The introduction of the hand and attempts at turning and decapitation also played their parts. The concentric pulling together of the retraction ring slipping back over the fœtus leads to a relative expansion of the tract below—a point which has not received sufficient attention.

The fact that there was little blood in the peritoneal cavity seems to show that the rupture was incomplete at first. And the absence of retro-placental hæmorrhage shows that the separation of the placenta—which would not occur until the fundus had been fully retracted—did not take place till the circulation was feeble. Upon these facts the conclusion is based that the prolonged labour and the attempts at turning produced incomplete rupture, the tear into the peritoneal cavity being a later occurrence during the transportation of the patient.

The chief point of interest in this section is the light it throws on the difference between complete and incomplete rupture. While the peritoneal relations are not exactly indicated in this section, the reflection of the peritoneum seems to be high up above the level of the brim at either side—it corresponds, in fact, to a section I described from the first stage of labour—and it is

Digitized by Google

interesting to note that at the sides we have an extensive incomplete tear; that is to say, the peritoneal cavity is not opened into. It is only when the tear has extended towards the posterior aspect of the uterus that the peritoneum has given way. The section therefore illustrates the point I drew attention to in describing the lateral relations of the peritoneum and the light which these might throw on the difference between complete and incomplete rupture.[1]

As to whether the rent involved the cervix only, or extended into the body of the uterus, we have no conclusive evidence. Zangemeister evidently inclines to the view that the thinned area which tore was cervical only—at least as far as its muscular wall is concerned. This is borne out by the statement that the retraction ring represents the os internum of the old anatomists.

His distinction between axial and circular tears is interesting, and the explanation of the production of the former in this case we quite endorse. The evidence, however, as to its not becoming a complete tear until after the circulation had practically ceased is not conclusive, because hæmorrhage at the placental side is not a necessary consequence of separation of the placenta in normal labour.

Résumé.

1. A review of the literature shows that several pregnant uteri have been described in which the "decidual reaction" extends below the os internum. While some find in these specimens the indication of transitional physiological changes through which the uterus in pregnancy always passes, the weight of evidence is in favour of their being aberrant types.

2. Bumm and Blumreich found in a frozen section from the second stage a cervical canal measuring 2·2 in. in front, and from 3½ to 4½ in. behind; also a retraction ring posteriorly immediately above cervical mucosa. Hence they inferred that the cervical canal in the Author's section must be as long posteriorly, that the retraction ring was there also at the os internum, and that the membranes described as partly growing, partly separated, were artificially stuck on.

3. Proof has been given—(1) that there is a decidual-lined area below the retraction ring in the Author's section; (2) that a

[1] *Edinburgh Obstetrical Transactions*, vol. xii., 1886-1887, p. 46.

Digitized by Google

shorter length of the cervix agrees with a greater thickness; (3) that *in this case* the retraction ring is some distance above the os internum; (4) that therefore there is here a lower uterine segment which is not stretched cervix but part of the wall of the body of the uterus.

4. The thinness of the cervix posteriorly in Bumm and Blumreich's Section is abnormal; and the epithelium of the glands in the upper part of the so-called cervical mucosa is not that of normal cervical glands.

5. Zangemeister's Section shows that in rupture of the uterus the tear is incomplete so long as it is lateral, but becomes complete when it extends to a part where the uterus is covered with peritoneum.

Discussion as to what is normal is futile. What has to be ascertained is, what is most frequent. Generalisations from one specimen are inadequate.

DESCRIPTION OF PLATES.

Plate I.

Genital Tract from Author's Case that died towards the end of the Second Stage.[1] ($\frac{1}{3}$):—

m, Membranes, attached down to wavy line *x* but separated below; *p*, placenta; *rr*, retraction ring; *sp*, sacral promontory; *uvp*, utero-vesical peritoneum; *ppd*, pouch of Douglas; *nf*, ridge corresponding to neck of child; *oi*, os internum and *oe*, os externum, cervix being shaded; *b*, limit of bladder behind pubes; *u*, urethra; *av*, *pv*, anterior and posterior vaginal walls; *r*, rectum; *a*, stretched anus; *v*, vulva; *pb*, perineum stretched.

The cervical canal measures 1·7 in. anteriorly, and 1·3 in. posteriorly; the membranes are still attached below the retraction ring (see Plate IV.), but separated lower down (see Plate III., Fig. 1).

Plate II.

Genital Tract from Bumm and Blumreich's Case that died in the Second Stage.

The placenta is on the anterior wall, and comes down to the os internum.

The cervical canal measures 2·2 in. in front.

The uterus shows a thinner (less retracted) wall at the fundus and posteriorly than in Plate I.; and the retraction ring is less developed. The distance between it and the posterior lip of the cervix is 5 in.; and over the greater part of this area are cervical glands—*cf.* Plate III., Fig. 2—and free membranes.

[1] From the Author's *Atlas of the Anatomy of Labour*, 3rd edition, Plate XXIII. (reduced to one-third).

Digitized by Google

Plate III.

Fig. 1.

Reproduction of micro-photograph[1] of posterior wall of lower uterine segment and cervix, beginning 1·25 cm. below retraction ring, and extending to the os externum (reduced $\frac{2}{1}$, *i.e.*, twice the size of preparation), taken from section in Plate I. :—

1. and 2. Membranes (decidua and chorion), unseparated.
3. Membranes detached and unfolded.
4. Decidua.
5, 6 and 7. Cervical glands.
8. Os externum.
9. Vaginal epithelium.
10. Posterior fornix.

N.B.—The os internum lies between 4 and 5.

Fig. 2.

Reproduction of micro-photograph of posterior wall of cervix from Bumm and Blumreich's Section, including retraction ring and upper *half* of stretched cervix (reduced $\frac{2}{10}$, so as to bring it to same scale as Fig. 1, *i.e.*, twice the size of preparation) :—

1. Retracted musculature of the body.
2. Firm attachment of the membranes.
3. Boundary line between musculature of body and cervix.
4. Beginning of cervical glands.
5. From here downwards, typical cervical glands.
6. Detached membranes (amnion and chorion).
7. Stretched cervical musculature.

Plate IV.

Fig. 1.

Micro-photograph of membranes from immediately above the point of their separation (between 2 and 3 in Plate III., Fig. 1). Showing decidua and chorion, decidua evidently growing from the uterine wall and not stuck on by pressure.

Fig. 2.

Section taken higher up (from 2), showing chorion and decidua, the latter growing *in situ*.

[1] From the Author's *Atlas*, 3rd edition, Plate XXIV.

Digitized by Google

MEDICAL INSPECTION OF SCHOOLS.[1]

By A. MERCER WATSON, L.R.C.P.&S.E., L.F.P.S.G.

Introduction.—There is little need, I think, to apologise for bringing before you this evening the subject of medical inspection of schools. Instead of following in Scotland's wake, England has in this matter been before us, and since the 1st January of this year all her public elementary schools have become the subjects of medical inspection. We have, however, the immediate prospect of a similar inspection in Scotland, for the recently introduced Education Bill for Scotland makes provision for this, and therefore I feel that as a Society it behoves us to look into the future, to forecast as far as we can what it holds for us, with a view to moulding coming conditions instead of allowing ourselves to be moulded by them. If we do not overrule circumstances circumstances will overrule us; and if in the near future we medical practitioners find ourselves the slaves of the public in educational matters, as we so often are in matters purely medical, can we feel free from blame?

Apart from this, there is no body of citizens who are more aware than we are of the absolute necessity of "doing something for the children." Teachers and others who deal with the young see merely the conditions of their scholars during school life; we, who care for men, women and children at all ages, know, as none others can know, the mass of preventable disease due to pre-natal causes, of sickness during childhood from disregard of the ordinary laws of health, of death caused by carelessness and neglect, along with all the misery and destitution of the adult due to bad health and physical incapacity to fight the battle of life.

The stirring, or rather the awakening, of a national health conscience has been one of the results of the South African War, and the Royal Commission on Physical Training and an Interdepartmental Committee on Physical Deterioration were the first attempts at scientific dealing with national health and physical conditions.

I do not propose to discuss the points brought out by these two commissions, but rather to consider the practical aspect of the actual conditions and prospects of school medical inspection from the point of view of the Medical Inspector himself.

[1] Read before the Aberdeen Medico-Chirurgical Society, 2nd April 1908.

Digitized by Google

Memorandum.—The desirability for this is, I think, shown by the haste and urgent manner in which the various medical societies and branches of the British Medical Association in England have rushed into the field *after*, instead of *before*, the issue of the Memorandum on Medical Inspection in Public Elementary Schools, dated 22nd November 1907. By it, the Board of Education for England directed that medical inspection in the public elementary schools come into operation on 1st January 1908, and thus gave the educational boards and the medical practitioners concerned in the question barely six weeks in which to organise methods and adapt themselves to the new conditions thereby created. The result has been that the profession has had to accept these conditions without having had time to consider them or to prepare for their consequences; and it is with the hope of rousing attention in Scotland to what the near future has in store for us, that I have undertaken to bring the matter before you to-night, and in order to this end, perhaps the simplest method is to consider the Memorandum 576 just referred to, and also Circular 582, dated 23rd January 1908.

Object of Memorandum.—The first of these begins with a disclaimer, repeated at intervals, to the effect that school inspection does not aim "merely at a physical or anthropometric survey, or at a record of defects disclosed by medical inspection." We are not therefore to aim at statistics, at the formation of standards of well-being, but, as the Memorandum goes on to say, "at the physical improvement, and, as a natural corollary, the mental and moral improvement of coming generations." In order further to appeal to John Bull's pocket, it is pointed out that, "in point of fact, if rightly administered, the new enactment is economical in the best sense of the word. Its justification is not to be measured in terms of money but in the decrease of sickness and incapacity among children, and in the ultimate decrease of inefficiency and poverty in after life arising for physical disabilities." It is further pointed out—and on this I should like to lay stress—that "by the Education (Administrative Provisions) Act, 1907, under which medical inspection takes place, there is power given to all Local Education Authorities to make arrangements, to be sanctioned by the Board, for *attending* to the health and physical condition of the children in elementary schools." We have therefore clearly stated not only that the Local Educational Authorities have power

Digitized by Google

to carry out medical inspection, but also to see that medical attendance and treatment be secured to the children in their schools.

Officers.—The Board then proceeds to lay down the law regarding the carrying out of the work by stating that under the superintendence of the County Medical Officer or Medical Officer of Health of the City (as the case may be) the actual execution of the work is to be deputed "wholly or partly to suitable medical colleagues or assistants (men or women), who either will be appointed specially for the purpose under him or will be Local Medical Officers of Health."

Sir Robert Morant holds that school inspection is "an integral factor in the health of the nation, and that in order to avoid dual jurisdiction in such matters as the sanitary control of school premises and the notification and prevention of the spread of infectious diseases," it ought to be carried out in "immediate conjunction with the Public Health Authorities and under the direct supervision of the Medical Officer of Health." Where no medical officer has yet been appointed, so keen is the department to put the work under one, that the county council is advised that one be appointed, as "in no other way will the council be able effectually to secure adequate control, economy and efficiency in carrying out their new work." In commenting on this judgment Sir Robert Morant goes on to say that, "generally speaking, the Inspector will be the Medical Officer of Health of the authority which appoints the Education Committee, and when the work is more than he can undertake, that medical officers be appointed to work under his supervision;"—"that in some districts such officers may be Local Medical Officers of Health holding office within the county; in others, they may be registered medical practitioners specially appointed for the purpose." "It is clear that the School Medical Officer may be a Medical Officer of Health, a Poor Law Medical Officer, a private practitioner, or, as occasion requires, a skilled specialist."

In making such appointments preference is to be given to men and women who—

1. Have had adequate training in State Medicine or hold a Diploma in Public Health;

2. Have had some definite experience of School Hygiene; *and* —not *or*—

Digitized by Google

3. Have enjoyed special opportunities for the study of diseases in children.

Outside Views re Officers.—Such, then, are the ideas of those in authority in England regarding the organisation to be created, and as such they have called forth wide differences of opinion in the profession in England. For some three months letters and articles, as well as reports of meetings, have shown what wide divergence of views are held in different localities. In some, where the Medical Officer of Health has little to do, he is pleased to undertake more work with the hope of a fair salary and the loss of a more or less onerous private practice; in others, the Medical Officer of Health is held to have too much to do already, and hardly even to be able to overtake his own work; in some places it is held most undesirable that a local practitioner be appointed School Medical Officer in his own immediate district, owing to the fact that the Memorandum more than hints at treatment as well as inspection.

In short, médical opinion is in a chaotic state; and before the law is laid down for us, may it not be well for us to consider whether—(1) the Medical Officer of Health shall be the official head in his district with Assistant-Medical Officers of Health under him; or (2) shall he be assisted by local general practitioners giving him part-time help; or (3) shall practitioners be appointed as whole-time inspectors, debarred from general practice, and, in districts where several be employed, shall they act each independently, or be under the direction of the Medical Officer of Health of the district?

There seem to be various difficulties in the way. If the Medical Officer of Health be interested in schools and school work, all may be well, provided he be not already fully employed; but if he already have more work on his hands than he can adequately do himself, or himself supervise, why add more to the burden or load him with work which he cannot but depute to someone else, and which he cannot even adequately supervise? School inspection is a new departure, and will require not only executants but organisers. Schedules have to be filled up, but, more difficult, the facts to be scheduled have to be chosen, codified, arranged; methods have to be sought out—in short, digestion and assimilation of ascertained facts have to be provided for, and no hard-driven, harassed Medical Officer of Health of any large dis-

Digitized by Google

trict can, it seems to me, be sufficient for these things. Then again, how far can local general practitioners fairly undertake to give part-time to this work in view of local competition and the risks of interfering with the patients of other doctors? On the other hand, if a School Medical Inspector inspect school children and do nothing else, will he not run the risk of becoming a machine for registering facts and figures, and be as great a trouble to the family doctor as his local brother? The regulation that "the inspection shall be conducted in school hours and on school premises" makes it difficult to see how a full-time official is to be occupied after 4 P.M., and consequently how his salary is to be an adequate living wage, and yet proportioned to the work he is to do. This difficulty is got over in many places in England by appointing an Assistant-Medical Officer of Health to do the school inspection work, and also to assist the Medical Officer of Health as he may require. This, to my mind, is an unfortunate arrangement, as it makes the School Medical Inspector an inferior official, and instead of ensuring a permanent man in a district —one who knows and appreciates local conditions—almost certainly implies short tenure of office and a passing on "to a higher sphere" after a short time.

As regards the qualifications for the School Inspector, differences of opinion also emerge. Many hold that the D.P.H. has as little to do with schools as with ordinary general practice, and that State medicine may be left to the Medical Officer of Health. A good general knowledge of children, as well as of children's diseases—of eyes, ears, throats—of what can be expected in the way of domestic hygiene, wide sympathy, shrewdness and common sense—a sense of what is owing to children, teachers, fellow practitioners — seem to me more important than State diplomas. Inspection of dead meat or fish, analyses of alcohol or pepper, even the inspection of lodging-houses or plague-infected ships, seem to be far removed from the inspection of infant classes —of vermin-infested heads, of presystolic mitral murmurs, of lateral curvatures, of astigmatism, running ears, or adenoids! Dentistry would be of greater value. May we not some day look for a special university course and degree of M.O.S. (Medical Officer of Schools)?

Subsidiary Agencies.—Along with the Medical Officer, the Memorandum notes "subsidiary agencies," and includes the

Digitized by Google

"teachers, the school-nurse" (where such exists), "the parents or guardians." As regards the parents or guardians, I think we will all agree with Sir Robert Morant, that it is in the home that both the seed and the fruit of public health are to be found;" but whether or not the school-nurse is to be added to the list of school requisites, and whether the teacher is to undertake "some portion of the inspection," are again, I take it, debatable questions. It is all very well to teach the elements of hygiene and physiology to the already hopelessly over-worked training-college student, but to ask him (or her) to test vision, to report on probable adenoids, seems to be creating a band of men and women who are likely to think they know when they do not, and whose observations can only have a very modified value in the doctor's eyes.

What is the object of making the teachers point out suspected cases of defective eyes and ears? Does this imply that only these cases are to come before the Medical Officer? And, if the whole class is to pass through his hands, why lay an extra burden on the teacher?

Nature and Degree of Inspection.—When we come to the character and degree of the inspection, there are again outstanding difficulties. Circular 582 includes a schedule drawn up in "response to requests for further and more definite guidance regarding details of medical inspection." It is a document which certainly does not err on the side of shortness, and yet this foolscap sheet of details is regarded by the Board as "constituting the minimum of efficient medical inspection," and it is also stated that the "inspection of each child should not occupy on an average more than a few minutes, and that the child need only, as a rule, have its clothes loosened or be partially undressed." It is hoped that a parent or guardian may accompany the child to the inspection, and, for the sake of the inspector, I hardly know whether to hope that this be or be not so!

The details of the examination are many and varied, passing from the exact date of birth, through the whole gamut of possible previous illness—measles, whooping-cough, chicken-pox, scarlet fever, diphtheria—on to "other illnesses," as rheumatism, tuberculosis, congenital syphilis, small-pox, enteric fever, meningitis, fits, mumps, &c.

The examiner has next to deal with the "family medical

Digitized by Google

history (if exceptional)." How on earth is he to know if it be exceptional unless he probe it to the very bottom? Then follow the date of the examination, standard, condition of clothing and footgear, height, weight, nutrition (as distinct from muscular development or physique), appearance of skin, hair, expression (redness or pallor of mucous membranes have to be noted as indications). Cleanliness of skin and head are to be judged separately, and skin diseases noted. Then follow the jaws, to be reported on as regards "condition of temporary and permanent teeth, amount of decay, also of oral sepsis." "Mouth-breathing, inflammation, enlargement or suppuration of the tonsils, probable or obvious presence of adenoids, polypi, specific or other nasal discharge, catarrh, malformations (palate), &c." Glands come next, followed by "external eye diseases, including squints, mystagmus, twitchings; vision to be tested by Snellen's types at six metres, each eye to be tested separately as a rule, and if the result be less than $\frac{6}{9}$, or there be signs of eye-strain or headache, fuller examination should be made subsequently. No sight-testing is to be undertaken under six years of age." I need only enumerate the further headings—ear disease, hearing, speech, mental condition (including attention, response, signs of over strain, &c.).

The next main heading refers to "diseased conditions actually present, or signs of incipient disease," and includes "heart and circulation, lungs, nervous system, tuberculosis (glandular, osseous, pulmonary, or other forms), rickets, deformities, spinal disease, &c., infectious or contagious disease," and, to cover anything omitted, if omitted it can be, "other disease or defect."

And all these endless details need not, on the average, occupy more than a few minutes, and the child need only have its clothes loosened or be partially undressed! "While it is necessary that all indications of diseased or unsound conditions should be thoroughly investigated, needless medical examination of healthy children should be avoided."

The whole thing seems to me absurd and impossible; either the work must be properly done or scamped, and in no "few minutes" can anyone make such a detailed examination fairly or honestly.

There is a tendency, I fear, with a view both to reducing expense and to avoid frightening the nervous parent, to minimise what has to be done. I know of one large public school where the

Digitized by Google

Medical Officer was paid so much an hour, and was told after a few days that his rate of work would never do; that twelve to fifteen children per hour must pass through his hands, or "it would cost too much." Twelve children per hour gives five minutes each!

Number of Inspections.—At present there is no intention of instituting an annual examination. The Board has decided that not less than three inspections during school life are required—the first on admission, the second about the third year of school life (say at seven years of age), and the third about the sixth year of school life (at ten years old). In some regions this may be deferred—properly, according to my views—till the last year of school.

One other point regarding the schedules may be noted as one of the strange contradictions of this Memorandum. The facts scheduled are to be entered in a register kept at the school, the "confidential nature of many of the entries being carefully respected." Is the Medical Officer alone to know the nature of the entries; and which are to be considered confidential and which not? One is inclined to throw the paper down as absurd and ridiculous, and yet it is solemnly issued with the imprimatur of a great department!

Treatment.—Having laid down a system of inspection, the Board next considers the outcome of it all, and in many respects this is, to the medical faculty, the most important and difficult part. It raises the whole question of treatment both in and out of school. In order not to frighten us, it calls treatment "measures of amelioration," and lays down the injunction that the education authorities shall "supervise or carry out some method of amelioration." As to how this is to be done there is little help, beyond the mention of some conditions where, so far as I can see, no difficulties exist. Bodily cleanliness is to be insisted on by the provision of baths, with their "necessary accompaniments of towels, soap, sponges" (one trembles at the idea of a common sponge, and wonders if Sir Robert Morant ever heard of germs and infection).

School-nurses can attend to verminous bodies and heads; but what if there be no school-nurses?

For defective sight, early correction at the instance of the education authorities, either alone or in conjunction with some

Digitized by Google

voluntary society, is suggested, and so on. You may call it Socialism, or pauperising, or what you will, but the fact remains, that unless the medical profession rouses itself and faces what is before it, we shall find ourselves face to face with the risk of losing our family practice, at least among the working classes, and with the fact that hospitals and voluntary societies will be unable to overtake the cases streaming in at their doors—cases which, at present, in many instances, are attended to and cured by the family medical attendant.

Personally, I am perfectly clear that the School Medical Officer ought to have nothing to do with treatment—the question of how a remedy is to be forced upon unwilling parents is not his function, but ought to lie entirely outside it.

Salaries.—Having thus considered the work to be done, a few notes on the question of remuneration may not be out of place.

Of course this entirely depends on what is asked of the Medical Officer. The Council of the British Medical Association recommends that for part-time officers remuneration should be at the rate of £50 per annum for one half-school day per week, a half-school day being reckoned as two hours.

As Assistant Medical Officers of Health—and here I quote from recent advertisements—£150, rising to £250; as Medical Officer of Health and School Inspector, £400 to £800; and as School Medical Officer only, £220 to £300 per annum.

The Board having recommended that women be employed in this work, they are also being advertised for, and there has been a serious attempt on behalf of a considerable number of Educational Boards to undercut salaries by offering a lower figure to the women than to the men. May I ask your sympathy and support in the efforts being at present made by various medical women's societies to resist this—an attempt which will tell disastrously against the salaries of men as well as of women unless resisted by a combination of all. In several English counties the local branch of the British Medical Association has taken the matter up, and by supporting the women who refuse to work for unworthy salaries has prevented unfair competition between men and women, to the mutual advantage of both.

Conclusion.—And now, in conclusion, I think that, however critical or even sceptical we may feel as to some of the proposed methods and suggestions, we will all agree that it is well a

Digitized by Google

beginning has been made. We are all conscious that more must be done for the children than we, as medical practitioners alone, have been able to achieve, and we will all welcome any suggestions which try to make for the national health and well-being. Is it not we who have hitherto borne alone the burden and heat of the day; and if others be now willing to help us with our heavy task, may we not welcome them and offer to them our cordial co-operation? We must, however, guard our position and not become the slaves of those whose interest is new and whose youthful ardour may tend to make them think that all we have done was futile and inadequate, and must secure for ourselves generous co-operation and not replacement.

PATHOLOGY IN THE NEW CURRICULUM IN THE UNIVERSITY OF EDINBURGH.

By STUART M'DONALD, M.D., F.R.C.P.Ed.,
Lecturer on Pathology and Bacteriology in the School of Medicine of the Royal Colleges, Edinburgh.

IN a previous communication in this *Journal*[1] on the subject of the divorce of pathology from medicine, I ventured to formulate some suggestions with regard to reform in the teaching of pathology in the Edinburgh Medical School. At that time the subject of the New Curriculum was under consideration, and I then expressed the opinion that, whatever the new regulations were to be, they would in no way countenance the dangerous suggestion that the pathological training of the student should be completed earlier in the medical course than was the case under the old *régime*. I ventured to hope then, that the pathological traditions in the Edinburgh School would be sufficient to counteract any such move. This hope has been falsified, and to-day we are faced by a position which is fraught with great danger to the proper medical training of our graduates.

Without going the length of describing the relation of pathology to medicine in the new regulations as an actual divorce, it must be admitted that it has come perilously near a judicial separation! Before attempting to explain the situation to those who may not have given the New Curriculum special study, it

[1] *Scottish Medical and Surgical Journal*, February 1904.

Digitized by Google

may be well to state the premises which should guide the would-be medical reformer. It is an unfortunate fact that many teachers become so obsessed with the prime importance of their own special subject that they become blinded to the fact that their department is only one among many, and their ideas with reference to the teaching of their subject are put forward without due consideration of the equal claims of others. One sees this so clearly in the case of many teachers that one must go cautiously, lest unconsciously one becomes inoculated with the same virus. Let us clearly understand then that the ultimate aim and object in the case of the ordinary student is not the provision of skilled anatomists, physiologists, and pathologists for an already overstocked market, but rather the thorough training on modern scientific lines of the general practitioner of medicine.

I humbly submit that the average medical student of the present day is being over scientifically educated, in some subjects at least. By no means let it be understood, however, that the University's sole function is the training of the average man. By all means let us have the most thoroughly equipped scientific departments in every subject, and let us provide every facility for the good student.

Sooner or later the one-portal system will surely come, and the State will exercise its proper function as a licensing body. If sufficient care be taken that the standard of the State qualification is kept nearer that of our better universities than that required by certain licensing bodies, and if the degrees granted by these universities are to exempt from the State examination, the universities have nothing to fear. They will still train for the State qualification, but, in addition, they will provide more advanced courses and grant a degree on a higher standard. This question is bound up with the present method of granting distinction and honours in the degree examinations. This is unsatisfactory, and will remain so till honours courses and honours examinations are held in the strictly medical subjects at least. These, however, are matters for the future. It is the present we are concerned with.

I must say that I can see no serious objections to the new regulations as a whole. On the other hand, they contain much that should prove of advantage to the medical student. Appearance for examination in one subject at a time has been adversely

Digitized by Google

criticised. All depends on how the regulations are worked. A possible danger of an attempt to cram six months' work into the last six weeks before an examination can be satisfactorily dealt with by a more searching examination and a higher standard if need be.

But with regard to the subject of pathology in the new scheme, I must confess to a feeling of strong opposition. Let us examine the regulations more closely. The student is now required to begin his systematic course of lectures at the beginning of his third winter session. Formerly he started at the beginning of the third or fourth summer session with his practical class, the lectures being taken in his fourth winter. Personally, I see no objection to this earlier start of his pathological study. Indeed, in my former paper I advocated this; but it must be remembered that at the beginning of his third winter the student has still his anatomical examination to pass; his first opportunity being in the following December. It is to be feared also that a not inconsiderable proportion of the candidates may still have the physiology examination to negotiate. Added to this, the student at the same time (beginning of his third winter) starts another new subject, viz. systematic surgery. Now, is it reasonable to expect the average student to devote much time to his pathology during the first three months of that winter, and if he has not grasped the principles of general pathology how much good will he get from his lectures on special pathology in the last three months of his course? I have had practical experience during this last winter session of how the student may be influenced in the future. Of course one must not be too hasty in drawing conclusions at this early stage in the working of the new regulations. There must be a period of transition before the normal level is attained; but I can only say that I had, this last winter, several students who completed their second professional in December. In the class examination before Christmas they only obtained marks qualifying for their attendance certificates. This might have been anticipated, seeing that they were then working hard for their anatomical examination, but after this had been completed their class results were no better, and in some cases were actually worse. As far as I can gather, only a very few students have so far availed themselves of their new opportunity of taking out their practical pathology in the first half of the third winter session. The great

Digitized by Google

majority of the men adopting the new regulations are about to start their serious study of pathology during the coming summer session; at the same time they start their practical pathology, and they are supposed to be qualified for appearing for their pathological examination in July—that is, after some ten weeks' serious study. They are supposed to attend post-mortem examinations during the second half of the previous winter session or during the summer session immediately preceding their examination, but in the latter case their opportunity of attending the post-mortems is limited, as from 11 to 1 they are supposed to be engaged at clinical surgery in the wards. As medical autopsies are held at 11 o'clock they can therefore only have an opportunity of seeing the surgical *sectios*, which of course are much less numerous than the medical.

I must confess that I see only two alternatives from this most imperfect pathological training. There must either be a very large rise in the percentage of failures, or the standard of the examination must be lowered. Even those who pass must almost necessarily have a much more limited knowledge of their subject than has been the case in the past. Either of these alternatives would be more than regrettable, but for the sake of the school the former would be preferable, for Edinburgh has just cause for pride in the pathological training her students have been given in the past.

These, I submit, will be the inevitable results if present conditions are to be continued. That the position will right itself in time I have no doubt. Soon enough the imperfect pathological training will tell adversely on the study of the final subjects, and in time pathology will regain her proper position. Before this is brought about, however, may not Edinburgh have lost that which may be difficult to regain.

It appears to me that the mistake made in the framing of the new regulations is the regarding of pathology as a preliminary subject on the same footing as anatomy and physiology. As a matter of fact, pathology is essentially a final subject; any attempt to separate it from medicine and surgery is bound to be disastrous. The student's active interest in pathology must be kept alive right up to his final examination, and the completion of his pathological studies two years before that final examination is an altogether retrograde move. It may be urged that in the final papers questions

Digitized by Google

almost purely pathological are often set, and in the orals in medicine, surgery, &c., a knowledge of morbid anatomy may be required, but this can in no way be regarded as sufficient. Sooner or later the pathological regulations must be recast if Edinburgh is to keep in the forefront as a medical school. In some of the newer English provincial medical schools the pathological examination is taken as part of the final, and Edinburgh, which has often in the past given a lead on this subject, should not be above taking a lesson from her younger rivals. I can imagine that the clinicians may not at first sight regard this view with much favour, and it would indeed be unfortunate if this postponed pathological examination meant neglect of clinical work in any way. I should certainly have sympathy, too, for their objections if the examination was supposed to cover the same ground as at present. As I endeavoured to explain, however, in my former paper, I would propose to limit the scope of the final pathological examination to pathology in strict relation to medicine, surgery, midwifery, &c. The groundwork of the earlier pathological work might be tested by an earlier and much more elementary examination held, say at the end of the third summer session—that is, at the time at present fixed for the completion of the examination. I believe that this would relieve the student to a very considerable extent at a time when admittedly he is overburdened with classes and examinations. It is too early, however, to begin altering the new regulations. They must have a fair trial, but I think it is becoming generally admitted that they may be modified for the better in several directions. When that time comes it is to be hoped that the claims of pathology for a fair consideration will not be forgotten. It is very little use to raise objections to present conditions unless one can suggest some alterations which might be carried out at once without interference with the general scheme, and though the objection to the early completion of the student's pathological training remains as strong as ever, I feel sure that an entire remodelling of the present course in pathology is perfectly practicable, and would react immediately for the good of the student. My excuse for writing on the subject at present is to suggest a reframing of the pathological course, and to indicate the advantages that might be expected to ensue; at a later date, but the sooner the better, the more advanced scheme with the double pathological examination might be easily grafted on to the one I now venture to propose.

Digitized by Google

As I have already said, I think no fault can be found with the earlier start in the student's pathological training. I should therefore propose that the subject be started as now recommended, at the beginning of the third winter session. The pathological work of that winter, however, must be lightened. Instead of the usual one-hundred-lecture course it seems to me it would be better for the student to attend that session, say a sixty-lecture course—three lectures weekly being delivered. The three meetings per week should not be too strictly adhered to in the earlier part of the session, as the scheme is devised to give the student a more intelligent interest in his systematic lectures on surgery, and to lighten the labours of the teachers of that subject. The lectures might be therefore given daily to begin with, the thrice-weekly arrangement might hold for the later part of the session. Immediately after some introductory lectures on the pathology of the cell, the important subject of inflammation might be at once begun. Ulceration, necrosis and repair are also subjects of prime importance to the surgical student, and should be taught early in the pathology class. The general pathology of infection and elementary bacteriology might also be advanced in the course. Other subjects treated in this first winter's course might be neoplasms, atrophy, hypertrophy, vascular derangements, parasites, &c., and, generally speaking, the same ground that is usually covered in the first fifty lectures of the course as given at present. The model arrangement in teaching any subject is that the systematic and practical courses should run concurrently, but I must say that it appears folly to expect students to give much attention to practical pathological work before Christmas. The student should then be still actively engaged at his practical anatomy. He has little enough time for this at present. After Christmas, however, when it is to be hoped the great majority have completed their second professional examination, the practical pathology classes should be at once started. One of the main difficulties in the way of teaching histology in the winter session is the absence of daylight at the only time students could attend. Artificial illumination, however, would prove satisfactory enough. There should be no insuperable difficulty in finding accommodation and suitable hours. The only afternoon practical class appearing in the syllabus for the latter half of the third winter session is practical materia medica, and, as stated in the syllabus, it may be postponed to the

Digitized by Google

following summer. One point must, however, be insisted on. The days of the one-hour practical class are numbered. Such classes must meet for at least two hours at a time. It is common experience that as much can be done in one practical class of two hours' duration as in three separate hours. Twenty to twenty-five such meetings would, I fancy, be sufficient to illustrate by practical work the ground covered in the systematic course. On the days throughout the session on which lectures are not delivered lantern or other practical demonstrations might be given. I consider that such a course would give the student a reasonably good grounding in the subject of general pathology. There seems no reason for the students being required to attend post-mortem examinations up to this date. They can have little value to those who have as yet had no experience of special pathology or medicine. The practical gain to the student in other directions from such a course as I suggest is that the winter work would be lightened, his interest in surgery would be made more intelligent, and he would be given a better chance to complete his second professional examination in a reasonable time. We now pass to consider how the summer session may be best spent from a pathological point of view.

In the syllabus at present the following hours are recommended for pathological study in the third summer session, viz. 8 to 11 and 2 to 4, with 1 to 2 for attendance at surgical post-mortems. I should propose that there should be a daily lecture on special pathology to complete the systematic course, with practical classes running concurrently, of two hours' duration and meeting thrice weekly. These practical classes should illustrate the lectures, and in addition to the tuition given in morbid anatomy and morbid histology as at present, opportunity should be afforded the student of making preparations for himself of specimens of blood, sputum and the various pathological fluids and tissues which are constantly available from the wards. In other words, the subject of clinical pathology should be studied practically. Attendance at the post-mortem department should be compulsory during this term. From 11 to 1 in this session the student is recommended to study clinical surgery, but I must say I see no reason why the hour at which medical post-mortems are at present held should not be altered. Undoubtedly the alteration of the hour at which any class is held in Edinburgh is not to be

Digitized by Google

lightly suggested. A perfect storm of opposition may be safely depended on, but a little consideration should satisfy anyone that, in the case of post-mortem examinations at least, no insuperable objection would be encountered. At the end of this summer session it is certain that the student would have had a training in pathology, which will, I am sure, warmly recommend itself to the physicians at least, who would be able to make ever so much more of the students in medicine the following winter than they can under present conditions. It will be noticed that no provision has been made so far for a regular course in bacteriology, and as things are at present I see no possibility of such a course being made proper use of before the end of the third summer. It may be noted, however, that, with the extra lectures and practical work suggested, time can be found for much more bacteriological work for the ordinary student than has been possible in the past. The good student, as heretofore, will probably still take out the bacteriological class, but it is probable that it would be of more use to him if he postponed it to the following winter, or even later. When the lightening of the earlier years of medical study is accomplished, it will be time enough to make bacteriology a compulsory class. I know, however, that there are many competent authorities who would insist on this being adopted at once. With the extra practical work suggested it will also be possible to conduct the pathological examination on more practical lines than has been possible in the past. I submit that this modified course would not only give the student a much better grasp of the principles of pathology, but would give him an infinitely better chance of passing his third professional examination.

Under this scheme the student should be able to begin his fourth winter session with a much more intelligent interest in his medicine, clinical medicine, &c. As I have endeavoured to indicate, however, his interest in pathology must not be allowed to wane, and one possible method to ensure this is that he should be made to attend the post-mortem room in the latter half, at least, of his fourth winter session. It is only when he is engaged in clinical work that he can be expected to fully realise the importance of pathology. Up till now he may not have fully appreciated the fact that he is dealing, not with dead tissues, but with vital changes, and his pathological training will be of little use to him unless he is able to associate the changes he sees in the post-

Digitized by Google

mortem room with his clinical observations in the wards. I do not observe in the syllabus that during the first half of the fourth winter he has been assigned any special work for the hour from 11 to 12. During the latter half he is recommended to attend medical out-patients. At this stage in his medical training I cannot help thinking that the medical out-patient room is not the proper place for him. In the first place, work here, to be of any value, can be available for a very limited number; and in the second place, the necessarily rapid diagnosis of the physician in charge is not the best of lessons for the junior student, who should then be impressed with the belief that medical diagnosis can only be successful if carried out with great detail. Such experience as he may gain in the out-patient department may have value later in his course, but at this early stage it can be of little real use. Without claiming too much of the student's time for the study of pathology, it seems to me that this hour at least could be more profitably spent in the post-mortem room. It is the urgent and bounden duty also of the physicians and surgeons of the infirmary to insist on the attendance of their students at every post-mortem examination of patients who have died in the wards, and if unable to attend themselves, their assistants should be present to explain the clinical history of the case before the *sectio* is performed. The subject of morbid anatomy is such excellent training for the student's power of observation that its importance cannot be readily exaggerated. As I have already stated, however, one must endeavour not to be led away by what appears to be the supreme importance of a subject to the teachers of that particular branch of medicine. It may be thought that one is claiming too much of the student's attention for pathology, but I humbly submit that there is no subject in the curriculum which is increasing in practical importance to the student at the same rate as this division of medicine. It is one of the sure and solid foundations on which the training of the practical clinician can be most securely laid, and I would earnestly appeal to the Faculty in the University, and to all others interested in the subject of medical education, to give their earnest consideration to this question of pathological reform, and to support the above or any other feasible scheme on similar lines.

Digitized by Google

SOME CLINICAL NOTES.[1]

By JOHN GORDON, M.D., Aberdeen.

I AM of opinion that the following cases may be of interest to the members of the Society:—A young lady, troubled with a slight roughness of skin, applied a small quantity of that largely-advertised preparation, zam-buk, to her face. On the following day there was a crop of small blisters on the side of her face to which she had applied the preparation, and I was called in.

I found the skin inflamed with a slight vesicular eruption where she said she had applied the zam-buk. She informed me that she had applied the zam-buk to a bruise she had received on her ankle when playing hockey. I examined the ankle, and found that it also showed evidence of similar inflammation.

On the following day the skin and the ankle were greatly inflamed, and the vesicles much more in evidence—in some places coalescing. I then said to her I had little doubt but that the eruption on both ankle and face were due to the use of zam-buk. The patient was distinctly doubtful, so I suggested that we might have a control experiment by applying a little on the other ankle. This she willingly agreed to do, and on the second day the ankle showed signs of inflammation.

The chin and the ankle on which the zam-buk had been first applied were now in a very inflamed condition, the vesicles had formed into large bullæ. The ankle was specially bad; the blisters were as large as walnuts, and the whole ankle was inflamed, painful and œdematous. The ankle of the control experiment was likewise in a state of acute inflammatory action, and it speedily ran the same course as the ankle to which the preparation had first been applied. For the best part of a week the irritation and the pain continued; extravasations of blood into the blisters took place on both the ankles, and altogether the patient was in an awkward predicament, and suffering much pain.

On the tenth day I opened one of the blisters and dressed it with suitable dressing. A few of the blisters showed slight signs of suppuration. The patient had to pass three weeks in bed as the result of the application to her ankles.

It may be interesting to note that the sister of this patient

[1] Read before the Aberdeen Medico-Chirurgical Society, 2nd April 1908.

Digitized by Google

had been for a considerable period making free use of zam-buk, with nothing but beneficial results according to her own ideas. My patient informed me that since her unfortunate application of zam-buk she had heard of several cases followed by similar results.

The case reminds us that the widely-advertised claims of these proprietary bodies constitute a danger to a too credulous public. The wonderful accounts of their beneficial action are, I have no doubt, in many cases mythical, while such a case as I have treated was a positive misfortune to the individual who used the so-called remedy.

The other notes to which I wish to draw your attention for a few minutes were cases in which cantharides had been applied. In both sciatica was the disease. The one was a gentleman, aged 40, who had been suffering for some time from an acute attack of sciatica in his left leg. He was ordered a cantharides plaster, 2 inches by 2, to be applied over the upper region of the sciatic nerve. About two hours after this application he suddenly began to suffer intense pain in his right kidney region, and the lower portion of the right side of the abdomen, accompanied by sickness, retching, thirst and faintness.

I saw him shortly after this sudden attack, and found him with a slow, small pulse, his face pale and anxious-looking, with cold perspiration about his forehead—a picture of misery. He stated that the pain was agonising, radiating down from the right kidney region along the abdomen into the testicle; that he had very frequent desire to make water, and passed small quantities of urine without obtaining any relief, while every movement caused an increase of pain.

I thought I might now be dealing with complication in the form of a renal calculus. I removed the blister; the skin showed no signs of vesication or redness.

While I was still there the pain seemed to increase in violence, the patient moaning and being very restless. The paroxysms of pain came with a great frequency, and were confined to the right side; that is, to the side opposite the one on which the blister had been applied. I administered half a grain of morphia hypodermically, ordered demulcent drinks and warm applications over the right side. I waited for about an hour, at the end of which time the morphia had so far controlled the pain.

Digitized by Google

Six hours later I saw the patient, who told me he had been quiet for three or four hours, but that the pain had again recurred, and was still extremely severe. The locality of the pain was practically the same as I have already mentioned. He was still troubled with a frequent desire to pass urine. Examination of the water showed neither albumen, casts nor blood. I gave another hypodermic injection of one-fourth grain of morphia.

When I saw him the following morning he was still pained in the right side, and had a frequent desire to make urine. The symptoms were indeed all present, but in a modified degree. The irritation to the right kidney continued so far as symptoms were shown until the third day. I explained to the patient that such conditions as I have detailed occurred sometimes after the application of cantharides. Both the patient and his wife were, however, particularly anxious to have a blister applied again, as they had great faith in the efficacy of the blister for the sciatica. On the sixth day, after the application of the first blister, I gave a reluctant consent to the application of another to the same locality. Three hours after this application I was sent for, and found the patient in almost the same condition as that which had followed the application of the first blister, and I treated him in a similar manner. Again the part to which the blister had been applied showed no signs of vesication or redness.

It is singular enough that, at the same time, I had another patient suffering from sciatica, to whom a friend had given an application of capsicine and cantharides. This preparation, a proprietary one, had been energetically rubbed into the hip, which had been previously treated with turpentine, and within twelve hours the patient showed signs of severe irritation of kidney and bladder. The group of symptoms proved most persistent; some two or three weeks elapsed before the patient could say that they were relieved. I have no doubt that this case also was one of absorption of the cantharidine, and probably the previous action of the turpentine had rendered the absorption of cantharidine more easy.

Throughout all my former experience I had not hitherto observed the same results follow the external application of cantharides. It is stated by most authors who write on cantharides that such results do occasionally follow the external application of cantharides, but I can hardly think that such results are of frequent occurrence.

Digitized by Google

It is particularly to be noted that in the one case of sciatica, where the small blister was applied, no redness of skin was produced, and there was nothing to indicate that the blister had caused any irritation of the cutaneous surface, still there is no doubt that the irritation of the right kidney was caused by the absorption of the cantharidine. It is remarkable how small a quantity of this substance was able to produce the untoward effects. The appearance of the patient on both occasions was that of severe collapse, and the agony which he endured was painful to witness. An important point is that the kidney affected on both occasions was that remote from the application.

THE TREATMENT OF ECZEMA OF INFANTS AND YOUNG CHILDREN BY THYROID.

By J. EASON, M.D., F.R.C.P.,
Assistant Physician, Leith Hospital.

ECZEMA is said to furnish the dermatological clinics of the world with one-third of their total cases. The exact causes of eczema in infants and young children are said to be obscure, and much theorizing still prevails. Doubtless the causes are various, and among others the chief would appear to be external irritants, gastro-intestinal disorders due to the unsuitable quantity or quality of food, or during dentition, and it is a common observation that eczematous children have been or are fed on artificial foods. It is not my intention to add to the theories already so numerous upon the etiology of eczema in children as well as in adults, nor do I propose to state the theories upon which I have for a period of sixteen months been treating such cases solely, when expedient, by the internal administration of thyroid substance. The following are brief notes of a consecutive series of cases in which the results have been so satisfactory that I propose to give thyroid treatment further trial.

CASE I.—R. F., aged 14 months, has had eczema of the face since the age of three months. The eruption has never been entirely away during the eleven intervening months. During the greater part of this time I had treated the case with starch poultices and various ointments and pastes, including Lassar's paste, cala-

Digitized by Google

mine ointment and tar. The child was sent to the Children's Hospital, Edinburgh, as the failure to obtain a satisfactory result may have been in some degree due to the home conditions and to the inefficient methods of the mother, who, however, was quite diligent in her attention. The result of the sojourn in the hospital was, I have indicated, not entirely satisfactory, and the eruption was soon again as bad as ever.

I again saw the child when it was fourteen months old. The eruption was extensive on both cheeks, red and tender looking. It was noticed that the hair was very dry and had a lifeless appearance. On 20th November 1906 I began the administration of thyroid. Thyroid tabloid 2½ grs. was given daily.

On the 28th December, when I saw the child next, the eruption was quite away. Twenty-eight days after the administration was stopped there was a slight return of the eczema, which again disappeared in a week during thyroid administration. There has been no eczema since.

CASE II.—J. M., aged 5 months, was seen at Leith Hospital on 1st October 1907. Eczema had been present since the age of two or three weeks. A bottle-fed baby. The milk was sometimes boiled, but generally not so, and sometimes lime water was added. At the present time the eruption involves the entire skin of the face and scalp. At other times, it is reported, the eruption has also involved the arms. The bowels are regular and the motions satisfactory. Treatment was begun on this date with thyroid. sicc. gr. ¼ daily.

15th October. Decided improvement is reported by the mother after the six powders were finished in six days. None were given after that until present date, and the eruption is again becoming worse. Thyroid treatment resumed to-day.

18th October. Great improvement in eruption.

23rd October. Moderate improvement since last date, five days ago. Photograph taken to-day.

25th October. Dose of thyroid doubled.

A fortnight later the mother reported to Dr. Finlayson, the Resident Physician, that the child had now gone home to Kirkcaldy, the eruption having disappeared under thyroid treatment.

CASE III.—A. T., aged 9 months, was seen at Leith Hospital on 18th October 1907. Eczema rubrum. Since the age of seven months

Digitized by Google

there had been eczema of face and head, and various ointments had been tried. Sometimes the eruption disappeared for a week and reappeared. Thyroid. sicc. gr. ¼ daily begun to-day.

23rd October. Photograph taken.

8th November. Eruption is now decidedly better.

19th November. Child seen at home by Dr. Finlayson. It was teething and had bronchitis. The rash was much better. Was seen by Dr. Finlayson on two following days, the symptoms mentioned being rather severer.

24th November. The thyroid treatment was stopped.

26th November. Child had numerous teething convulsions and died to-day. There was only a slight eruption on the ear at this time.

CASE IV.—W. G. F., aged 1 year, was seen at Leith Hospital on 24th March 1908. Eczema had been present for six months. Had been treated with starch poultices by the hospital district doctor. Some improvement occurred, but the treatment for which the starch poultices were preparatory was never begun. The skin has never been free of the eczema since it started six months ago. At present there is an eruption making a complete circle—brow, temples, cheeks and chin. The skin of the right cheek is raw with rubbing and scratching. The scalp is also involved generally over its surface, and there are numerous crusts on the scalp, but not elsewhere. Eczema is also present in the flexures of the elbows and knees, and slightly also on the extensor aspect of forearms, especially the right. On the same side the wrist skin is also involved. Thyroid treatment begun.

31st March. The eruption is very much better. The child sleeps better, the pruritus being very much diminished. In this respect, the mother states, the improvement is very pronounced.

7th April. The child is teething, and the pruritus is more than last week, and the inflammation is also somewhat greater. The dose of thyroid has been doubled.

14th April. Pruritus and inflammation somewhat lessened, but both of these signs still marked. Thyroid again increased. Thyroid. sicc. gr. ¼ T.I.D.

20th April. The inflammation and pruritus are decidedly less, and normal skin is showing in many of the eczematous parts. Case still under thyroid treatment.

Digitized by Google

CASE V.—H. M'L., age 5 years, seen at Leith Hospital on 10th March 1908. A healthy child, who has had no previous illness nor skin eruptions previous to the onset of the present eczematous eruption three months ago. There is a dry papular eczema involving the whole breast region. Patches are also present on the back, chiefly over the scapular region. Same form of eruption is present on the forehead. Thyroid. sicc. gr. ½ daily.

17th March. Marked improvement.

3rd April. Since the 23rd of March no thyroid was given, as the eruption was very nearly well, and the mother wrongly supposed that I considered further treatment to be unnecessary. The eruption returned, and the same treatment has been resumed to-day.

17th April. Considerable improvement has again occurred, and thyroid treatment is being continued. The inflammatory condition is entirely gone, and dry scaling has taken its place.

Another series of five cases was treated with thyroid with equally satisfactory results; but as in these the treatment was combined with local treatment, they are therefore not test cases, and have not been included here. The combined treatment was expedient in the latter cases, because external applications are deemed orthodox treatment. It was therefore necessary, in the treatment of some cases, to avoid the accusation of experimenting and to prescribe local applications.

It was not my intention to publish the above observations until a larger number of cases had been tried, but a paper by Moussous[1] has just appeared, in which he speaks of successful results in two cases. He also refers to the success of Parhon and Urechie in a case which showed evidence of hypothyroidism. These independent observations by Moussous, Parhon and Urechie and myself are, I hope, sufficient to stimulate the interest of those who have larger opportunities in this department of medicine, and who are therefore better able to estimate the value of thyroid treatment.

[1] André Moussous. "Erythème fessier et Eczéma Séborrhéique," *Archives de Médecine des Infants*, p. 180. Mars. 1908.

Digitized by Google

Births and Deaths in Eight of the Principal Towns of Scotland during March 1908.

DURING the month of March 1908 there were registered in the towns of Glasgow, Edinburgh, Dundee, Aberdeen, Paisley, Leith, Greenock and Perth the births of 4167 living children, of whom 2110 were males and 2057 females. These births are 462 more than those registered in February, and 210 more than those registered in March 1907. They are equivalent to an annual birth-rate of 26·7, a rate which is 1·3 higher than that for February, and 1·0 higher than that for March of last year. The birth-rate for the month ranged from 29·8 in Leith to 20·7 in Edinburgh. In Paisley it was 29·7; in Dundee 28·9; in Glasgow 28·3; in Greenock 28·1; in Aberdeen 26·2; and in Perth 21·4.

Of the 4167 births, 277, or 6·6 per cent., were illegitimate. This rate of illegitimacy ranged from 17·2 in Perth to 3·5 in Paisley and in Greenock. In Aberdeen it was 7·8; in Glasgow 7·1; in Edinburgh 6·6; in Dundee 5·3; and in Leith 5·1.

Of the 3034 deaths, 1129, or 37·2 per cent., were of children of less than 5 years old; and 801, or 26·4 per cent., were of persons of over 60. The former are 30 fewer than in February, but 112 more than in March of last year. The latter are 39 fewer than in February, but 14 more than in March of last year.

Deaths of children of less than 1 year old numbered 602, a number which is equivalent to an infantile mortality-rate of 147 per thousand births. This rate is 17 lower than that for February, but is 13 higher than that for March of last year. The infantile mortality-rate for the month ranged from 207 in Dundee to 102 in Edinburgh. In Perth it was 194; in Paisley 167; in Aberdeen 162; in Leith 148; in Glasgow 146; and in Greenock 120. In Dundee and Paisley the infantile mortality-rate was higher than in the previous month, February, but in the remaining six towns it was lower than in that month.

During the month one death from small-pox was registered. It occurred in Leith, and was that of a person reported not to have been successfully vaccinated on account of being insusceptible. Deaths from measles numbered 209; they are 7 more than in February, and 184 more than in March of last year. Of them 155 were registered in Glasgow. Deaths from scarlet fever numbered 21, and from diphtheria 17. Deaths from whooping-cough numbered 94; they are 4 fewer than in February, and 39 fewer than in March of last year. Deaths from enteric fever numbered 5, and from cerebro-spinal meningitis 27, of which 18 were in Glasgow, 3 in Edinburgh, 2 in Paisley, and 4 in

Digitized by Google

Digitized by Google

Photo by Balmain, Edinburgh.]

THE LATE DR. UNDERHILL.

Digitized by Google

Leith. There were no deaths from typhus fever. Deaths attributed to influenza numbered 16.

Deaths from diarrhœas numbered 27; they are 10 more than in February, and 5 more than in March of last year. Deaths from puerperal septic conditions numbered 8; from malignant disease 149, of which 87 were attributed to carcinoma, 9 to sarcoma, and 53 to other or unspecified forms of cancer. Deaths from heart disease numbered 274; from apoplexies 177; from premature birth debility 95; and from alcoholism 6.

Deaths from pneumonia numbered 353; they are 58 fewer than were registered in February, but 12 more than were registered in March of last year. Deaths from bronchitis numbered 286; they are 14 more than were registered in February, but 43 more than were registered in March of last year. The deaths from pneumonia constituted 11·6 per cent. of the total deaths for the month, and those from bronchitis 9·4 per cent.

Deaths from tuberculous diseases numbered 350; they are 20 fewer than in February, and 68 fewer than in March of last year, and amounted to 11·5 per cent. of the total deaths. Of these deaths from tuberculous disease, 239 were attributed to phthisis; 50 to tuberculous meningitis, 34 to tuberculous peritonitis and tabes mesenterica, and 27 to other forms of tuberculous disease.

Deaths from violence numbered 119. Of them 3 were reported to be suicidal, 2 being by hanging, and 1 by cutting.

Of the persons whose deaths were registered during the month 5 males and 9 females were aged 90 years and over, the oldest being a spinster aged 101, who formerly was a keeper of apartments.

Obituary.

CHARLES E. UNDERHILL, B.A., M.B.,

President of the Royal College of Physicians, Edinburgh.

By the death of Charles Edward Underhill, which occurred at Baberton House, Juniper Green, on Friday, the 24th of April, the Royal College of Physicians has been robbed of its distinguished President, and the Medical Profession in Edinburgh of a universally beloved and highly honoured member. Suffering as we at present are from a keen sense of personal sorrow, it is impossible to realise what a blank his loss will cause in the daily life of the profession, or how widely his death will be mourned and his presence missed in the numerous institutions,

Digitized by Google

societies and medical clubs with which he was so long and so honourably associated.

For several years it was known to himself and his intimate friends that he was suffering from aortic disease, and though repeatedly urged to take a well-earned rest, it was his wish to die in harness, and only when it became physically impossible to continue the struggle any longer did he unbuckle his armour and lay himself down to rest.

"Charlie" Underhill, as he was affectionately known to his friends, was born and brought up in a medical atmosphere, for not only were his father and grandfather well known and highly respected medical practitioners, but he could also count an uncle and six brothers in the ranks of the medical profession. As an example of the inbreeding of these medical instincts, it is related of him that, when little more than a youth, he attended and successfully conducted a midwifery case when his father and his assistants were from home and no other medical assistance was obtainable. Brought up in such an environment it cannot be wondered that his thoughts early turned to medicine, and he was fortunate in inheriting, along with keen medical instincts and perceptions, many of those fine traits of character which so conspicuously adorned his life and conduct. The second son of the late W. Lees Underhill, F.R.C.S., of Tipton, Staffordshire, he was born there in 1845, and was educated at Shrewsbury Grammar School and afterwards at Caius College, Cambridge, of which he was scholar and Tancred student, graduating B.A. with honours in 1867 and M.B. in 1870. When at Cambridge he was captain of his college boat, and he was "reserve" for a place in the University eight in 1866.

It was while at Cambridge, doubtless, that he developed that love of the classics, that educational culture, and that fine literary taste which were constant sources of enjoyment to him throughout his life, and a solace during those recent sad weeks of weariness of body and distress of mind. Coming to Edinburgh in the early seventies to complete his medical education, he became, by one of those accidents which determine so many careers, assistant to Dr. Matthews Duncan, and this formed the stepping-stone to his success, for, when a few years later Matthews Duncan removed to London, Underhill succeeded to his large and influential practice, in the conduct of which he unceasingly laboured for twenty years. It would be impossible to over-estimate the feelings of confidence and respect, of love and gratitude with which he was regarded by his patients, and well did he repay the trust they reposed in him by ungrudgingly devoting his time, his skill, and his energies to their interests and welfare. He was elected a Fellow of the Royal College of Surgeons in 1872, and a Fellow of the Royal College of Physicians in 1876.

Digitized by Google

Association with Matthews Duncan naturally turned his attention to obstetrics and gynecology, a branch of the profession with which his name has ever since been associated, and in which he developed a considerable consulting and private practice. He performed the first successful operation for the removal of a ruptured uterus in Edinburgh, and he contributed a number of thoughtfully written papers on obstetric subjects to various medical journals. For many years he was physician to the Maternity Hospital, and for a time he lectured on midwifery in the Edinburgh School of Medicine. Another branch of the profession which occupied much of his time and in which he was deeply interested was the diseases of children, and for ten years he acted as one of the physicians to the Royal Hospital for Sick Children. A lover of children, his visits to the hospital, accompanied, as he invariably was, by his inseparable companion, a big black retriever, "Wallace," were eagerly looked forward to by his little patients, and not less by the staff; for he had a kind word and a courteous recognition for everyone. He wasted no time in making his ward visits, for, owing to the acuteness of his perceptions and intuitions, he rapidly arrived at the diagnosis of his cases, and it was rare, indeed, that his conclusions proved themselves to be at fault.

Honours came to him unsought, for he was a man of a singularly unassuming and retiring disposition.

He was elected a Fellow of the Royal Society of Edinburgh, and he filled the posts of President of the Royal Medical, the Harveian, and the Obstetrical Societies, was President of the Edinburgh branch of the British Medical Association, and acted for a time as a manager of the Royal Infirmary. In each of these capacities he gained the respect of his associates by reason of the breadth and tolerance of his views and the soundness of his judgment.

The crowning honour of his career was his election, eighteen months ago, to the Presidency of the Royal College of Physicians. Many of his friends thought that the extra duties and responsibilities of the position would prove too great a strain upon him, but his sense of duty was strong, and he accepted the post when it was offered to him.

The Fellows will now recall with pleasure and gratitude the simple dignity with which he presided at the business and social meetings of the College, how unselfishly he devoted himself to its interests, and how punctiliously he performed every duty, in the face of many warnings, and while watching for the call which he knew was bound soon to come.

It is an open secret that he might have had the unusual honour of being the President of both the Colleges.

To those who were privileged to enjoy his intimate friendship, he

Digitized by Google

extended a charming hospitality in his house in Coates Crescent, greeting his guests with an old-world courtesy, and entertaining them with a quaint dry humour, and a conversation absolutely devoid of guile and free from any semblance of malice or uncharitableness. A member of the Church of England, he transparently mirrored in his consistent upright life of a Christian gentleman the doctrines and beliefs by which he was actuated. In his leisure moments he enjoyed a rubber at whist, a well-written book, or a good story, and during his holidays he spent many happy hours indulging in his favourite recreation of trout fishing on some Highland loch, or by some pleasant riverside, and in later years he enjoyed a quiet game of golf with a congenial friend.

He was a member of both the Medico-Chirurgical and the Æsculapian Clubs, and on the retiral of Dr. John Smith he was elected to the secretaryship of the latter, the oldest and the most famous of all the Edinburgh medical clubs.

The large and representative gathering which assembled at the funeral service at St. John's Episcopal Church last Tuesday, and afterwards reverently laid him to rest in the Dean Cemetery, was further testimony, if such were needed, to the place he occupied in the regard and affection of the citizens of Edinburgh.

To his wife, the sharer of his labours, and the partner of all his joys and sorrows, the tender and heartfelt sympathy of the profession is respectfully offered.

Farewell! good friend—may the sweet fragrance of the memory you have left behind encourage those of us who remain to endeavour to bear aloft as bravely, as steadfastly, and as modestly, the white flower of a blameless life. G. H. M. D.

Meetings of Societies.

Glasgow Medico-Chirurgical Society.

FOURTEENTH meeting, 3rd April 1908. Dr. Walker Downie, President, in the chair.

The meeting, which was very well attended, took the form of a demonstration of children's diseases, various members of the staff of the Royal Hospital for Sick Children contributing.

1. Dr. Barclay Ness showed a child aged three years, the subject of congenital heart disease. A ventricular systolic murmur could be heard all over the heart, but especially over the pulmonary area. The

Digitized by Google

condition was probably one of obstruction at the pulmonary valve with defective interventricular septum and patent foramen ovale. Examination of the blood, as pointed out by Gibson in many of these cases, showed increase of hæmoglobin, in this case to 20 per cent. above the normal. The red cells were doubled in number. The child is well-developed and well nourished, but the colour is somewhat purplish.

2. Dr. Ness showed one case of not very advanced, and Dr. T. K. Monro two cases of advanced cerebral diplegia. In Dr. Ness's case, a girl of eight, while the rigidity of the legs was marked the arms were much less affected. The knee reflexes were increased, ankle clonus and Babinski's sign were present. As is usual in these cases there was no optic neuritis nor other eye symptoms. The intelligence was good. On the child attempting to walk the typical cross-legged progression was seen.

In Dr. Monro's cases, boys aged two and eleven, the condition was much more advanced, and the intelligence of both was reduced to imbecility. Both children appeared well nourished. The gait of the elder boy was unusual in that the legs tended to be abducted rather than crossed. These cases are hopeless from the prognostic point of view. Sometimes the disease is arrested, but it can never be cured, and the usual course is to complete helplessness and imbecility. With reference to the ætiology of the disease, Dr. Monro was at one time inclined to consider injury to the head at birth as the common cause, but he was now of opinion that most of the cases are due to developmental defects in the neurons of the cerebral cortex. In connection with these cases Dr. Leonard Findlay described the pathological condition found in the brain and spinal cord of a previous case of Dr. Ness's. By the naked eye no abnormality could be detected in the membranes or in the brain or cord, except, perhaps, that the motor parts of the cerebral cortex appeared smaller than one would expect. Microscopically there was an absence of the large motor cells in the Rolandic area with descending degeneration in the direct and crossed motor tracts, and a decrease in the large cells of the anterior horns of the spinal cord. The other tracts in the cord were practically unaffected, except in the cervical region, where there was also some degeneration in the postero-lateral tract. These post-mortem findings quite agreed with the theory that a developmental defect in the motor cells of the brain was the cause of the disease.

3. Dr. Ness showed two cases, boys aged eight and twelve, affected with pseudo-hypertrophic muscular paralysis, the former a recent, and the latter an advanced, case. The younger boy showed some improvement from massage: he could rise now without climbing up on himself in the usual manner of patients so affected. The hypertrophic condition was

Digitized by Google

not far advanced, though it was quite evident in the buttocks, the calves and the deltoids, and the lordosis was decided. In the elder boy the disease had progressed to the atrophic condition and he had passed into an absolutely helpless condition. The end of such cases is frequently by suffocation from food lodging in the pharynx, or from mucus in the bronchi. Dr. Ness showed the family tree of four brothers who had come under his notice, and who were all the subjects of this disease. Four uncles and two cousins of these uncles were similarly affected.

4. Dr. Ness showed a case of cretinism, a male aged nine, and Dr. M'Kenzie Anderson two cases, females aged fifteen years and fourteen months. All showed the features, large tongue, coarse scanty hair, small stature, delayed intelligence with which one is familiar in such cases. All were improving under thyroid treatment.

5. Mr. Henry Rutherfurd showed a child on whom at four months of age he had operated for intussusception of the ileo-cæcal variety. As this was irreducible beyond the hepatic flexure he did a lateral anastomosis, transverse colon to ileum, with, as was evident from the child shown, satisfactory result. Mr. Rutherfurd also exhibited a specimen showing congenital obstruction from passage of a loop of ileum through an aperture in the mesentery in a child a few days old. The actual condition was made out only on post-mortem examination. Atrophic patches and even a cribriform condition of the mesentery have been described. The appendix from a child aged three and a half, showing the presence of a concretion, was another specimen shown by Mr. Rutherfurd.

6. Dr. Archibald Young showed a child aged three years, the subject of hydrocephalus. When six days old she was operated on for a large lumbar spina-bifida. The head began to enlarge at five months. The fontanelles are now closing and the child is improving. Speech and intelligence are satisfactory, and as regards the result of the spina-bifida operation the bladder and bowels are well under control and she is beginning to make use of her legs.

7. Dr. Walker Downie showed a girl of thirteen to demonstrate an enlarged gland situated laterally in the posterior wall of the pharynx. Suppuration of one of these glands is a much commoner cause of retro-pharyngeal abscess than is caries of the spine. It should be opened, of course with certain precautions, through the mouth and not by deep dissection from the outside.

8. Dr. Alexander MacLennan showed two cases of satisfactory result following operation for webbed fingers. He also gave a very interesting stereoscopic demonstration of some tubercular affections in children, dactylitis, scrofuloderma, tubercular lymphangitis, &c.

Digitized by Google

9. Dr. Edward Wright showed a boy of eight suffering from Pott's curvature with a very large amyloid liver. This organ extended almost to the pubis and the outline could be easily made out through the thin abdominal walls. Tubercular disease of the lungs was present and the kidneys were also probably affected.

10. Dr. W. K. Hunter showed (*a*) the stomach of a child aged eight weeks, who died as the result of pyloric stenosis. The condition was diagnosed during life, but operation was refused. There was a great over-growth of the muscular coat of the pylorus, both circularly and longitudinally. The channel was not completely occluded; indeed, a number ten catheter could be passed through it. This, Dr. Hunter said, was usually the case in this condition. Probably spasmodic contraction of the thickened muscle has more to do with the severe obstruction than the actual diminution in the lumen of the pylorus. (*b*) A skiagram from a boy aged nine, showing cervical ribs. There were no symptoms of pressure on the cervical sympathetic or on other structures such as are sometimes got in similar cases. (*c*) A photograph of a child with an extreme degree of hydrocephalus, probably congenital.

Aberdeen Medico-Chirurgical Society.

A MEETING of this Society was held on 2nd April, Dr. George Williamson, the President, being in the chair.

Dr. Beveridge described a case of empyema and gangrene of the lung, and demonstrated the patient. A preliminary exploratory puncture revealed the presence of pus in the pleural cavity. A rib was therefore resected, and a large quantity of fœtid pus evacuated, with but little improvement in the condition of the patient. A fortnight later there was a severe hæmorrhage from the wound, which ceased spontaneously. Three days subsequently a gangrenous slough of lung tissue of the size of a Brazil nut was expelled through the wound. The patient is now (three and a half months after operation) in perfect health.

Dr. Mackenzie Booth showed a patient thirteen years after tracheotomy for laryngeal stenosis. The stenosis was due to a cicatricial web in the plane of the vocal cords, with a small opening in it about the size of a crow-quill. Tracheotomy had to be done hurriedly owing to collapse of the left lung. The patient shows well-marked signs of specific rhinitis, with extension to the ears and consequent deafness. His voice is exceedingly husky, and he suffers from considerable discomfort from the tracheal aperture.

Dr. John Gordon described a case of severe vesicular and bullous

Digitized by Google

eruption resulting from the application of a proprietary ointment. He also read notes upon two cases in which the external application of cantharides for sciatica had been followed by severe renal symptoms resembling those of renal calculus. See p. 425.

Mr. H. M. W. Gray and Dr. Levack exhibited lantern slides of skiagrams and of skiagraphic tracings illustrative of Mr. Gray's paper upon "The Functions of the Stomach and the Operation of Gastro-enterostomy," published in the *Lancet* of 22nd February. They also demonstrated by means of the X-ray screen the stomach outlines of persons who had taken a meal mixed with carbonate of bismuth. Five cases were demonstrated in this manner, viz. three normal stomachs and two stomachs after gastro-enterostomy. They also showed lantern slides of skiagrams illustrating Beck's method of treating old-standing sinuses by the injection of a mixture of bismuth and vaseline. The slides, which included cases of psoas abscess and hip-joint disease with perforation of the acetabulum, showed very clearly the manner in which the bismuth mixture mapped out the various recesses of the sinuses. Mr. Gray had formed a favourable opinion of this method of treatment.

Dr. Fortescue showed skiagrams illustrating the method of "Plastic Radiography." From the original skiagram negative a transparency was prepared. The two plates were then superposed and a second transparency was printed off. The two transparencies were next superposed and a final print taken. The method consisted essentially in heightening the lights and darkening the shadows, and the final print thus obtained displayed a certain amount of perspective. Dr. Fortescue did not think that the results were so reliable as those obtained by stereoscopic radiography.

Forfarshire Medical Association.

A MEETING of the Society was held in the School of Medicine, Dundee, on Friday, 3rd April, at 4 P.M., Dr. Constable of Leuchars in the chair.

Mr. Greig showed a case of sporadic cretinism in a female aged 11 years. The case was typical of the condition, and presented that peculiar and characteristic physiognomy of apathy, with heavy, stunted body, bent limbs, and awkward, waddling gait. The head was unusually well covered with hair, and there were well marked supraclavicular pads.

He also showed a woman after two operations of partial craniectomy for syphilitic osteitis, who suffered before operation from exceptionally

Digitized by Google

severe headache, evidently caused by the pressure of the thickened bone, the removal of which gave relief. The pieces of the bone removed, and stereoscopic photographs of the patient before and after operation were exhibited. He then showed two cases after nerve suture, the first after primary suture of the median nerve, cut at the wrist; and the other after secondary suture of the ulnar nerve, cut at the elbow.

Dr. M'Gillivray showed a man who, while at work in a foundry, received an injury to his eye, causing a punctured wound of the cornea which produced a traumatic cataract. When the lens was removed it was seen that the foreign body, a small piece of steel, was implanted in the optic disc.

Dr. Don showed a case of early aortic aneurism with an X-ray photo of the condition. The outstanding clinical feature of the case was the loudness of the murmur, which could be easily heard without the aid of a stethoscope while standing beside the patient.

Dr. Foggie showed a boy with a patch of favus in the right axilla. There was no sign of the disease on the head or any other part of the body.

Mr. Greig exhibited a pelvis from an adult female showing double congenital dislocation of the hip. The acetabula were shallow and triangular in shape, and there was a depression in the right ilium caused by the head of the femur. Many years ago the case had been diagnosed as one of osteo-malacia and had been treated by removal of both ovaries. This was in pre-X-ray days, with whose advent the true condition of affairs was discovered.

He also exhibited a skull with synostosis between the atlas and the basioccipital.

Dr. M'Gillivray showed a specimen of an enucleated eye after penetration by a lead pellet, which was implanted in the intra-vaginal sheath of the optic nerve just behind the eyeball.

Dr. Kerr showed a heart with congenital malformation from a child 12 weeks old. The usual symptoms were present in life. The heart consisted of a greatly dilated right ventricle and auricle. The pulmonary artery was stenosed and almost obliterated, from it was seen arising the ductus arteriosus evidently patent. The cusps of the pulmonary valve were represented by three minute nodules. The aorta arose from the right ventricle and also from what represented the left ventricle a mere slit in the hypertrophied, ventricular wall, and would contain no more than ten drops of blood. The mitral valve was present but in miniature, and the opening led in to a small depression the size of a split pea, evidently the left auricle, separated from the right auricle by a very thin perforated wall. The aortic and tricuspid

Digitized by Google

valves were normal. To all intents and purposes the heart was a two-chambered one, the left side of the organ being crowded out of any useful existence.

Dr. R. C. Buist showed a liver with acute yellow atrophy from a case of eclampsia.

Dr. Pirie showed radiograms from a case of œsophageal stricture caused by an interthoracic tumour, the condition being well demonstrated after the patient had partaken of a bismuth meal.

Professor Weymouth-Reid gave a demonstration of colour photography as applied to medicine. He described the technique of the process and exhibited many most beautiful slides of pathological, physiological and botanical specimens, both macroscopic and microscopic.

Recent Literature.

CRITICAL SUMMARIES AND ABSTRACTS.

MEDICINE.

By J. EASON, M.D., F.R.C.P.,
Assistant Physician, Leith Hospital.

INDICANURIA.

THE *rôle* assigned by Metchnikoff to chronic intoxications of intestinal origin, viz. that of a leading factor in the production of arterio-sclerosis, and the methods which he is chiefly responsible for popularizing for combating intestinal putrefactions, render the subject of indicanuria one of ever-increasing importance. It is therefore opportune to consider, in the light of some recent researches, what significance should be ascribed to the excretion of indican in the urine, and what is the exact interpretation of its value for diagnosis and treatment.

The answer may be given at once, that the indican reaction is practically the only direct test clinically available as an aid to the diagnosis of enterogenic intoxication arising from proteid putrefaction. But the subject is one which may profitably be considered in some detail at the present time. The generally accepted view, that indol, which is a product of the intestinal putrefaction of proteid occurring under conditions to be referred to later, is a toxic substance, is now contested. Indeed, it seems that Porchet and Hervieux (*vide* H. Tissier, *Annales de l'institut Pasteur*, tome xxii. p. 199), have actually proved the non-toxic nature of indol, and consequently some adjustment of

Digitized by Google

our conceptions of intestinal auto-intoxication must necessarily follow should their work be confirmed. In any case, however, the indican reaction would still be the chief means by which proof could be obtained of the absorption of the products of proteid putrefaction of whose far-reaching effects on the tissues we have abundant clinical evidence. Houghton (*American Journ. Medical Science*, April 1908) and Mackee (*New York Medical Journal*, 14th March 1908) have recently furnished some facts which may be summarised as follows:—

Chemical Considerations.—The aromatic nucleus of the proteid molecule—of which preformed indol is a part—amounts to about 5 per cent., but as the disintegration of the proteid molecule under bacterial influences does not proceed along fixed lines, it is therefore not possible to work out with mathematical accuracy the amount of indol which could be formed from any given proteid. Intestinal putrefaction may sometimes be self-limiting if the end-products increase in concentration to a certain degree. In such circumstances, bacterial autolysis is favoured, and temporary "cure" may thus be the result. Indol formation, except in grossly pathological states, is confined to the cæcum and the ascending and transverse colon. Many forms of nitrogenous matter reach the ileo-cæcal valve, but only a few contain indol or are capable of yielding it. In this connection it is of interest to note that Nencki long ago was unable to obtain indol among the putrefactive products of gelatine. Salkowski and also F. P. Underhill (*American Journal of Physiology*, vol. xii. p. 176), have shown that the excretion of indican is decreased on a gelatine diet in the dog, and Underhill suggests the clinical importance of this fact for treatment.

Bacterial Considerations.—The formation of indol appears to proceed in the following manner:—Certain obligatory anaërobes (bacillus aërogenes capsulatus, bacillus bifidus, &c.) are putrefactive organisms, and are incapable of originating pathological changes in the intestinal contents, and putrefaction of proteid without anaërobes is impossible. These organisms are, however, unable to liberate indol. Its formation and liberation results from the intervention of bacillus coli communis and related forms (which are facultative aërobes) acting either on the products of anaërobic activity or on the products of normal proteolytic digestion which have passed along unabsorbed (not more that 14 per cent. of the total nitrogen ingested passes the ileo-cæcal valve in health).

Variations in the Absorption Power of the Intestine for Indol.—There appears to be no parallel between the amount of fæcal indol and the urinary indican (Baumstark, Herter). For this reason, any method of diagnosing the presence of enterogenic intoxication by estimating

Digitized by Google

proteid putrefactive products in the fæces is fallacious, and the value of the indican reaction is thus emphasised. Between the intestinal tract and the urine there is a great loss of indol—40-75 per cent. (Jaffé, Wang, Ellinger). The interpretation of this phenomenon is purely theoretical, and part of this loss may undoubtedly be accounted for by technical difficulties in the recovery of all the indican excreted. Possibly excess is retained or fixed in the body cells until the serum concentration has sufficiently diminished to permit its release. Brain tissue has this power. Jaffé concluded that the normal output of indican was from 5 to 20 mgrms. per diem. Houghton, while admitting this may be the average, believes that the "ideally normal" is that there should be no indican excretion. The urines of healthy children and of adults whose general health is good, and particularly those whose habits as to the use of meat are moderate, rarely contain appreciable quantities of indican. In support of the latter part of this statement Fletcherising experiments are conclusive. According to Houghton, an average daily excretion of 20 mgrms. is too high, unless the oxidising capacity of the individual is sufficient to detoxicate the indol absorbed from the bowel.

The consensus of opinion at present is that the indican of the urine depends exclusively upon the production and absorption of indol from the intestinal tract, excepting in those cases in which pathological processes, such as a putrid abscess, putrid bronchitis, pulmonary tuberculosis with cavity formation, the retention of a dead fœtus, gangrene, &c., are associated with the formation of the base. According to Houghton it is not in this class of cases that the reaction is of assistance in diagnosis, as the intestine cannot be excluded as a source. Beckman states that abscess does not cause it. The formation of indol is, therefore, limited to the intestine, and it appears during the course of proteid putrefaction, and as the result of microbic activity.

Owing to the fact that indol is a product of proteolytic cleavage, it has been stated by Flint and others that it may be formed by the action of the tryptic ferment of the pancreatic juice upon proteid food, and may be produced in this manner outside the body. But as Herter states, marked and persistent indicanuria has been observed in dogs from which the pancreas has been removed, and also in people in whom autopsy or operation shewed both the biliary and pancreatic duct to be occluded.

Just where and when indol is combined with sulphuric acid and potassium to form indican (indoxyl potassium sulphate), and so detoxicated, is not as yet positively determined. Herter and Wakeman found that the epithelial cells of the intestine possess the power of oxidising and pairing off these substances, but they agree with Petrone

Digitized by Google

and Pagano that the body depends largely upon the liver for protection against this and other enterogenic poisons. The epithelial cells of the intestine offer the first barrier; toxines that escape being detoxicated by the epithelium of the intestines or in the liver are acted upon by the lungs, and finally the circulating leucocytes play an important part. Besides these tissues and organs, the muscles, skin, and kidneys enter into the process of oxidising, combining and eliminating indol. Indol not so oxidised and combined has been proved to be toxic by Richard Howland and Lee, but, as I have already stated, Porchet and Hervieux have arrived at a contrary conclusion.

Diagnosis.—According to Mackee accurate quantitative methods of testing for indican are extremely difficult, and the qualitative tests, if frequently made, give a fair idea of the absorption proceeding. Negative results of course do not exclude the possibility of injurious types of saccharo-butyric fermentation. Nor do I understand that either the quantitative or qualitative indican test can give a clue to the amount of harm being done by toxic absorption, resulting from proteid putrefaction. One must determine this by the usual method of considering the severity and character of the symptoms. The indican does, however, give a clue to the nature of the toxine being absorbed, the species of bacteria which produce the toxine, and the amount of indican that is formed from the absorbed indol and thereafter excreted.

The indican test does not allow us to form a definite idea of the amount of indol absorbed, as there is no definite ratio between the indican excreted and the indol absorbed. The proportion of indol remaining in the circulation, or becoming fixed to the tissues is not revealed, and the proportion of indol which becomes absorbed and cannot be traced varies very much. It may be 40-75 per cent. of the whole. In this sense then the indican reaction is, strictly speaking, of value only in so far as it is a guide to the amount of detoxication and excretion of indol that is proceeding. It is not a reliable guide as to the amount of intoxication which the individual suffers. A method—of sufficient accuracy for clinical purposes—of measuring the indican excreted, was devised by Folin (*American Journal of Physiology*, vol. xiii. p. 45).

Exactly one-hundredth of a twenty-four-hour quantity of urine is taken for each determination. In this the indigo is developed by the addition of Obermeyer's reagent, and the indigo-blue taken out by means of 5 c.c. chloroform. With the chloroform solutions are then made colorimetric comparisons, using Fehling's solution as a standard. Fehling's solution is given the arbitrary value of 100. The advantage of the method is that it takes little time, and the standard for comparison—Fehling's solution—is always at hand.

Digitized by Google

Houghton insists that the reagents should be fresh, and when the urine, acid and oxidizing agent are mixed they should commingle at the same time, as first suggested by Emerson, and not as usually done by mixing two and adding a third. After the mixture is made it should be turned against the finger once, and allowed to stand for five minutes. Heating to blood heat before adding the chloroform will also assist. With high indican content the better method is to dilute the urine with known quantities of water.

Pathogeny.—The proper interpretation of indicanuria is not easy: If the indicanuria is permanent, then one will usually find local and general manifestations of disturbed metabolism. Metchnikoff considers that the auto-intoxication due to chronic intestinal putrefaction is one of the most important causes of premature senility, chiefly through its influence in inducing arterio-sclerosis. During the years in which the latter condition is not clinically evident, the word "toleration" is frequently but inappropriately applied, and it is precisely during this period that the physician's sphere of usefulness is greatest.

Symptomatology.—It is practically impossible to classify the symptoms of chronic excessive intestinal putrefaction.

Among other conditions which may be influenced by the measures adopted to diminish indicanuria may be mentioned Rigg's disease, anæmia, neuritis, neurasthenia. In the latter condition Mackee and co-workers have found that a marked indicanuria was found to be present in a large percentage of the cases. He says: "The achievements of treatment in these cases were exceedingly interesting and instructive, and as a consequence of these observations, I am of opinion that the intestinal putrefaction is the cause of many, a means of exaggerating the symptoms in some, and possibly the effect rather than the cause in other cases of neurasthenia."

Recently several authors have associated indicanuria with renal irritation, and Mackee considers there is sufficient evidence to show that indicanuria represents a serious obstacle to the recovery of a diseased kidney. Under such circumstances intestinal antiseptics are said to have been used with great advantage.

In recent literature frequent mention is made of intestinal putrefaction in connection with diseases of the organs of special sense, notably ocular disturbances, and a number of observations have been made lately in the malnutrition and chronic diarrhœa of children. Indicanuria is not infrequently associated with eczema, psoriasis, urticaria, erythema multiforme, pruritus, &c., and although a definite relationship has not as yet been established between these diseases and intestinal auto-intoxication, "there is little doubt," says Mackee, "that some such cases may be produced in this manner, while in others the indicanuria represents a possible contributory cause."

Digitized by Google

Treatment.

Dietetic.—Inasmuch as indicanuria is caused by the action of certain bacteria upon the proteids, it is essential in most cases to restrict the amount of this type of food. The rigour with which this is to be observed will of course depend on the severity of the condition. The rules for mastication as formulated by Horace Fletcher are also of much importance. Hygienic and proper exercise in the open air is of vast importance in aiding metabolism, increasing elimination and strengthening the digestive functions.

Medicinal.—Medicinal Intestinal antiseptics are damned with faint praise, and patients fail to do as well as expected when treated in this manner. It is hardly advisable to use such preparations for protracted periods, and the usefulness of the protective members of the intestinal flora may be harmfully influenced.

Lavage of the colon and stomach may sometimes prove necessary.

Bacterial Antagonisms.—Tissier succeeded in analysing the bacterial contents, and having determined the special bacillus, he was able to obtain very good results by modifying the diet and infecting the individual with microbes antagonistic to the ones at fault. The method is one which cannot become generally available. It is more practicable to determine whether the flora is saccharo- or proteo-lytic; and as Combe suggests, this information is sufficient to determine the *régime* and the nature of the antagonistic bacteria which might be employed. The diet should be such that the growth of the *flore fondamentale* is encouraged and the *flore surajoutée* discouraged.

Sour Milk.—In 1892 Rovighi, an Italian physician, drank daily a litre and a half of milk subjected to lactic acid and alcoholic fermentation. He found that in a few days the products of intestinal putrefaction in his urine were greatly reduced. In 1897 Herter reduced the amount of indican in dogs by injecting pure cultures of lactic acid bacilli into the small intestines. These and other observations explain why sour milk is of such value as a medicine, and why lactic acid will control certain cases of infantile diarrhœa.

Mackee's personal observation is that sour milk will control the majority of cases of indicanuria.

Metchnikoff and his school are of opinion that sour milk is of benefit not alone in virtue of its lactic acid, but also on account of the large number of desirable bacteria contained therein, which are able to colonise in the intestines, but Herter's most recent communication throws doubt upon the Metchnikovian theory. Mackee found that although lactic acid will control indicanuria to some extent, the indican will return to its original degree very soon after the lactic acid is dis-

Digitized by Google

continued. Buttermilk and milk soured by native bacteria have more thorough and more enduring favourable effects. Even better results are obtained if milk be fermented by certain foreign bacteria. When employing such preparations as the lacto-bacilline tablets from Paris, the lactone tablets from Detroit, or Yogurt capsules, it should be remembered that we are only giving relatively small numbers of bacteria, and they must be given over an extended period of time, and combined with a favourable diet before their effects become clearly manifest. Pure cultures are especially convenient for those individuals who cannot tolerate sour milk, but the results are not so striking.

SURGERY.

By A. A. SCOT SKIRVING, C.M.G., F.R.C.S.,
Assistant Surgeon, Royal Infirmary, Edinburgh.

The Prostate.

One result of the prolonged and somewhat heated discussion which occurred a few years ago regarding the operation of suprapubic prostatectomy has been a distinct increase in our knowledge not only of the surgery of the prostate but also of its anatomy and pathology. That much, however, still remains to be learnt is also evident.

Anatomical and Pathological Points—The Coverings of the Prostate.—At the present time the most generally accepted view regarding the investments of the prostate is as follows:—The most external covering is provided by the visceral portion of the pelvic fascia, and is termed the *sheath*. It is exceeding tough and fibrous; it does not completely surround the prostate, being reflected on to the bladder from the margins of the former organ. For these reasons malignant disease of the prostate tends to remain localised for a considerable time, and when extension occurs it is nearly always at first towards the floor of the bladder. In the operation of suprapubic prostatectomy the sheath is not interfered with, consequently extravasation of urine into the cellular tissue of the pelvis does not follow. Within the layers of the sheath the greater portion, at any rate, of the prostatic venous plexus is situated. For this reason in enucleation operations, whether suprapubic or perineal, dangerous bleeding is very seldom met with.

Internal to the sheath, in direct contact with the prostate and surrounding it completely, is the *capsule*. In the normal organ, in most cases, this investment is very thin. In pathological prostates, especially in those affected by adenomatous enlargement, it is usually, but not invariably, very much thickened. This is not due to any

Digitized by Google

increase in the normal capsule but to a condensation of the peripheral portion of the gland from the pressure outwards of the growing adenomatous masses. This view is supported by the almost constant demonstration of glandular elements here and there in the stroma of such capsules when submitted to microscopic examination. From the capsule numerous septa pass inwards, forming loculi for the glandular elements of the organ. Such loculation is, however, not very distinct. Within the fibrous stroma, especially round the urethra, non-striped muscular fibres are abundant. The glandular elements are most marked laterally and posteriorly. The capsule in the normal prostate cannot be stripped off in the same way as, for example, in the case of the kidney. For this reason, and from the presence of the fibrous septa just referred to, the term capsule does not seem a very appropriate one. Of the various names that have been applied to it the term "cortex," suggested by Shattock, seems perhaps least open to objection. Confusion still exists between it and the sheath. Thus, in the latest edition of a standard work on anatomy by various authors, in one section the sheath and capsule are described and named as above, in another section of the book the terms are exactly transposed! The normal prostate cannot be removed by enucleation. In the adenomatous prostate the finger, in most cases, makes its way between the lamellæ of the thickened capsule. The gland comes away in one or two portions. In either case the prostatic urethra is removed entire, being torn off at its junction with the membranous portion. A cavity is left behind lined by a variable amount of the outer part of the capsule. The thickness of this residual capsular tissue usually depends on the depth to which the initial penetration has been carried, and microscopic examination in fatal cases reveals the presence of compressed glandular elements. In a few cases, where encapsulation is very marked, the adenomatous mass or masses may be so shelled out that practically all the capsule is left behind lining the cavity, and the prostatic urethra may be preserved. It is extremely improbable that the enucleating finger ever passes between the capsule and the sheath, as believed by some. In such a case the term "complete prostatectomy" would be theoretically correct. Proof of this, however, is still wanting. In no such case, ending fatally, has the absence of glandular elements in the wall of the cavity left behind been demonstrated. Further, as pointed out by Cuthbert Wallace, even then the stretching of the outer layers of the capsule by a large growth might easily destroy all evidence of glandular elements. Still, for all practical purposes, the enucleation operation is sufficiently extensive to justify the term "complete prostatectomy."

The *surfaces* of the prostate have been variously described. In the

Digitized by Google

more recent text-books the organ is referred to as possessing an apex, a base or upper surface, an anterior, a posterior, and two lateral or antero-lateral surfaces. The apex or lowest portion rests against the posterior layer of the triangular ligament; the anterior surface is in intimate relationship with the bladder; the posterior lies opposite the lower part of the rectal ampulla; the lateral surfaces are in close contact with the anterior portions of the levatores ani. "The conventional heart-shaped contour of the posterior surface, as usually figured in books, is artificial . . . and the notch, which is supposed to indicate the division between the two lateral lobes, is remarkable by its absence. . . . It is the base of the organ which gives entrance to the vasa deferentia and vesiculæ seminales, and not the posterior surface, as usually described" (Cuthbert Wallace).

The Relation of the Urethra to the Prostate.—The prostatic urethra passes through the prostate as a rule nearer to the posterior than to the anterior surface. Its axis is pretty nearly vertical. In enlargement of the prostate the urethra may be altered as regards its position and axis in various ways. These deflections cannot be referred to here.

The so-called "Middle or Third Lobe."—Further investigation has confirmed the opinion that this is an improper term. The lobe referred to is that portion of the normal prostate which lies in the somewhat triangular interval bounded by the proximal portion of the prostatic urethra in front, and by the common ejaculatory ducts below and behind. It has no lateral boundaries, and is directly continuous with the rest of the gland. Cuthbert Wallace considers that though an isolated nodule may occasionally be found in the position of this "lobe," the third lobe tumour so often described is "almost invariably an extension from a tumour which has developed in one of the lateral lobes, or springs from the toe of a horse-shoe-shaped tumour." The same authority considers that the well-known *post-prostatic pouch*, found in cases of intra-vesical enlargement of the prostate, is due to three factors," viz. a broadening of the bladder-floor, a carrying forward of the internal meatus, and the existence of an intra-vesical projection. No fresh evidence has been produced to support the theory that these pouches are due to a giving way of the bladder wall. The lowest point of such pouches is no lower than the *normal* level of the bladder.

Stricture after Prostatectomy.—There are several very striking features connected with the operation of prostatectomy—for example the great age at which it is often successfully performed and the large size of some of the prostates removed.[1] Not less striking is the immunity

[1] Freyer successfully removed a prostate which practically filled up the entire bladder, and which weighed nearly one pound.

Digitized by Google

from stricture afterwards in almost all cases. Its non-occurrence is explained by Cuthbert Wallace on the ground that the outer part of the capsule, left behind in the enucleation operation, forms a connecting link between the musculature of the bladder and that of the membranous urethra, so that the urinary canal is never really interrupted. In support he refers to a case of W. G. Richardson, in which the prostate was cut away with scissors, in which, therefore, "the prostatectomy was really total," and in which an impermeable stricture resulted. Even supposing that the outer part of the capsule does not act in the manner suggested above, there is an important difference between an ordinary traumatic rupture of the urethra and the condition left after a prostatectomy. In the former case the rupture involves a specially narrow portion of the urethra, two portions of urethra are isolated, and contraction and retraction of their adjacent torn ends occur. After prostatectomy, by the removal of the whole upper part of the urethra, only one opening is present for contraction to occur. This is a large opening, and by the removal of the prostate it is practically continuous with the cavity of the bladder. It is, therefore, not legitimate to compare the two conditions, as is so frequently done. Cuthbert Wallace has only seen one case—a most interesting one—in which trouble with micturition followed. Normal micturition failed to occur, and the suprapubic wound refused to close. On reopening the bladder, it was found that the vesical mucous membrane was continuous over the site of the urethral aperture. This had to be punctured with a sound. No stricture was present.

The large *cavity left after the removal of the prostate* is immediately greatly reduced in size by the approximation of the bladder and rectum antero-posteriorly, and by the levators ani laterally. Thomson Walker, however, has shown that a small cavity may still be present two years after a suprapubic operation. This, in the case described, was bounded posteriorly by a "ledge," the upper surface of which corresponded to the trigone of the bladder.

As regards *the exact rôle which the prostate plays* in the human economy we are still in the dark. From the fact that it is only found in males, that it enlarges at puberty, that it atrophies after the removal of *both* testicles and does not develop in eunuchs, it is undoubtedly a sexual organ. That it is not absolutely essential is proved by its absence in certain animals.

"It is probable that it secretes a fluid in which the spermatozoa can live and thrive" (Cuthbert Wallace).

Suprapubic versus Perineal Prostatectomy.—Both of these methods in the hands of experts have in recent years been attended with a surprisingly low mortality, all the more remarkable when the age

Digitized by Google

and condition of the subjects on which the operation is usually performed are considered. Thus Young of Baltimore, in an article which well repays perusal, reports one hundred consecutive perineal prostatectomies performed by him without a death, and adds a footnote (16th January 1908) bringing the number of his consecutive successful cases up to 114. His complete list is 238 cases with seven deaths, a mortality of only 2·9 per cent.[1] This is the lowest mortality, so far as we are aware, ever yet recorded for the operation of prostatectomy. Young refers to the statistics of numerous other surgeons, and draws particular attention to the lessening mortality which attends increased experience and perfection of technique. A few of these figures may be quoted. In 1900 Fuller considered that the mortality of prostatectomy, even in skilled hands, was between 15 and 18 per cent. In 1904 Escat collected 382 cases of perineal prostatectomy with a mortality of 11 per cent., and 164 cases by the suprapubic method with a mortality of 18 per cent. Proust collected 813 perineal and 244 suprapubic cases, with a mortality respectively of 7 per cent. and 12 per cent. In 1906 Tuffier collected 1192 cases of perineal prostatectomy with a mortality of 6·6 per cent., Tenney and Chase 716 perineal and 396 suprapubic cases, with respective mortalities of 7·6 and 9·8 per cent. In Freyer's last report (suprapubic cases), March 1907, he had operated on 322 cases with 25 deaths, a mortality of 7·8 per cent. In his first 45 cases the mortality was 11 per cent., in the last 119, 7·5 per cent. Of the various methods that have been adopted in carrying out the perineal operation, that of Young seems at present the best. As it finds a place in one or two of the most recent works, notably in the new edition of Jacobson's *Operative Surgery*, it need not be referred to here. Young has described it in various published papers. The fullest account, profusely illustrated, is to be found in vol. xiv. of *The Johns Hopkins Hospital Reports*, in which full details of no less than 145 cases are given. In this volume, also, Young describes the technique of his more extensive perineal operation for carcinomatous cases. Here the prostate in its capsule and sheath, most of the vesical trigone, the vesiculæ seminales, and the vasa deferentia "as high up as possible" are removed in one piece. The large defect resulting is closed "by anastomosing the anterior wall of the bladder to the membranous urethra." This, contrary to what might be expected, is not difficult to accomplish. The anterior vesical

[1] Young includes every death which occurred during the stay of the patient in hospital, and "no patients were sent home to die." Further, "almost every case" was operated on, regardless of the gravity of any complications, if improvement did not follow preliminary treatment, catheter drainage, &c. He believes that only two of the seven deaths were due to the operation.

Digitized by Google

wall can be drawn down "with no great traction." As an instance of the thorough manner in which Young has presented his subject, it may be mentioned that these two contributions to the volume occupy between them 628 large pages, many of them in small type. An account of this operation, with the more important illustrations, will be found in the *Practitioner* (February 1908) by Thomson Walker. The latter surgeon considers that "the intimate relation of the prostatic tissue with the muscular floor of the bladder is such that an operation for cancer of the prostate, which stops short of removing the overlying portion of the bladder wall, courts an early recurrence of the disease."

In two out of six cases of carcinoma which Young considered not too advanced for operation, there had been no recurrence up to January 1908 (almost three years after operation). Nearly all recent writers comment on the necessity for early diagnosis in cancer of the prostate, and on the comparative frequency of its occurrence. Young has met with it in the proportion of one case of cancer to every four of hypertrophy (68 cases of cancer to 250 of hypertrophy). Unfortunately, the symptoms and signs are too frequently such that a diagnosis is impossible. Many cases of hypertrophy have been removed and only found to be malignant on microscopic examination. Often the symptoms are exactly those of hypertrophy. Further, according to Young, "a study of eighty-seven cases of carcinoma shows that the primary symptoms are often not urinary in character, but in the form of neuralgias of the pelvic region or back. Many a case of supposed sciatica, lumbago or neuritis is in reality carcinoma of the prostate, and if rectal examination reveals an induration of the gland, an exploratory perineal operation should be performed. When the posterior surface is exposed, the diagnosis can usually be made by palpation, but incisions into the lateral lobes and microscopic examination of frozen sections may be necessary."

With regard to the rival merits of suprapubic and perineal prostatectomy, it is unwise even yet to venture on any dogmatic statements. It would seem, however, that in malignant cases the perineal route is the only one that offers any hope of a radical cure. Further, the facts just referred to, viz. the difficulty of diagnosing malignant disease before operation, and its apparent frequency, will have to be faced by surgeons accustomed only to operate by the suprapubic method. Again, the much greater certainty of preserving the ejaculatory ducts in the perineal operation must be borne in mind. Young, in 200 cases, has demonstrated this "in almost every case" by careful examination of the specimens removed. This point is, of course, of no great moment in the case of prostatectomies performed upon men of

Digitized by Google

advanced age, but it becomes of importance if the operation is to be extended to cases of severe chronic prostatitis in younger subjects. (Young has operated on seventeen such cases with excellent results, and without impairment of the sexual powers.) On the other hand, there can be little doubt that suprapubic prostatectomy is the easier operation. It requires no special instruments, no special position, and makes no great demand on the anatomical knowledge of the surgeon. It is difficult for the operator to injure the rectum. Provided the surgeon has sufficient experience, when coming across the occasional tough prostate that will not enucleate, to know when to stop, there is not much risk of his damaging any important structure. It is more than probable, that if *all* the cases of prostatectomy that have been performed were published, the mortality of the perineal operation would be found to be very much higher than the suprapubic.

REFERENCES.

Prostatic Enlargement. Cuthbert S. Wallace. 1907.

Cunningham's Anatomy. 1906.

"Studies on Hypertrophy and Cancer of the Prostate." *Johns Hopkins Hospital Reports*, vol. xiv. 1906.

"A Report of One Hundred Consecutive Perineal Prostatectomies without a Death." Hugh H. Young. *The Journal of the American Medical Association*, 15th February 1908.

"The Radical Treatment of Cancer of the Prostate." J. W. Thomson Walker, F.R.C.S. *The Practitioner*, February 1908.

The Operations of Surgery. Jacobson and Rowlands. 1907.

GYNÆCOLOGY.

By B. P. WATSON, M.D., F.R.C.S.,
Gynæcological Tutor, University of Edinburgh;
Gynæcologist, Cowgate Dispensary.

SOLID TUMOURS OF THE OVARY.

IN an important paper on the above subject Briggs and Walker (*Jour. of Obst. & Gyn. of the Brit. Emp.*, February 1908) give an analysis of the cases of ovarian tumour operated upon by the former during the past twenty years. Four hundred and eighty-eight patients in all had been dealt with, and of these four hundred and thirty-nine had cystic, and forty-nine solid ovarian tumours, the latter thus constituting almost exactly 10 per cent. of the whole. Of these forty-nine solid tumours thirty-one were fibromata, three fibromata of the ovarian ligament,

Digitized by Google

three solid adenomata, seven secondary carcinomata, one primary adeno-carcinoma, one sarcoma, one teratoma, one cellular spleen-like tumour, and one surface papilloma. They remark on the small number of sarcomas—at most two among the forty-nine—and add that among the cystic tumours only one was found. Sarcoma of the ovary cannot certainly be diagnosed by histological examination alone without taking into consideration the after-history of the case, for many of the fibromata very nearly approach sarcoma in naked eye and microscopic appearances. Failure to recognise this accounts for the very contradictory statements as to their frequency made in some modern text-books. One case is quoted in which the soft brain-like character of the tumour, associated with marked ascites, led to the diagnosis of sarcoma, which, however, was negatived by the complete and permanent recovery of the patient.

According to their series, the relative frequency of fibroid tumours of the ovary generally given (2 per cent.) is understated. Their statistics give them as constituting 6 per cent. of all ovarian tumours. All varieties of fibroid tumours are represented in their series, with a preponderance of diffuse over circumscribed and pedunculated growths. This is to be accounted for by the fact that the tumours had generally attained a fair size before their removal. Any circumscribed tumour may by growth assume the character of a diffuse one, the term diffuse being used to indicate, not a simultaneous fibrotic change throughout the whole ovary, but the fact that the ovarian substance has been pushed aside and destroyed by the increase in the size of the tumour. In these cases, while there may be no recognisable ovarian tissue left, there is always a fibrous capsule from which the tumour can be shelled out to a greater or less extent. Most of them were definitely of excentric and not of central origin.

In circumscribed fibroids there is always ovarian substance recognisable at one or other point, either as (1) an envelope, partial or complete; (2) a boss at the site of the pedicle; or (3) an appendage on the distal surface of the tumour. The pedunculated growths originate from one of the poles or from the convex border of the ovary. They are generally of larger size than the circumscribed variety. In this description the authors bear out the findings of Fairbairn who some time ago clearly demonstrated the mode of growth of ovarian fibroid tumours.

Degenerative changes were present in some. Three had undergone torsion of the pedicle, causing blood extravasation; lymphatic dilatation, mucoid degeneration, œdema, necrosis and calcification were also observed.

The solid adenomata have essentially the same structure as the

Digitized by Google

cystic tumour of the same variety, the alveolar spaces being lined by columnar or cubical cells in single layers. Of the eight carcinomatous tumours only one was primary, and it was a unilateral adeno-carcinoma.

The diagnosis of a solid tumour of the ovary is generally easy except in the case of one with a long thin pedicle. A physical sign very often associated with them is the presence of ascites. One is apt to think of this as only occurring with malignant tumours, but the authors' records bring out the fallacy of this supposition. Ascites was present with twelve of the fibromata, *i.e.* 38·7 per cent.; with five (62·5 per cent.) of the carcinomata, and also with the teratoma and the sarcoma. In the case of malignant tumours the fluid is generally blood-stained; in the simple, clear. In all cases, with the removal of the tumour the ascites disappears, and only manifests itself again in the case of the malignant growths when metastases appear on the surface of the peritoneum. An interesting question is raised as to the mode of production of the free fluid in the case of innocent tumours. (In the malignant ones the presence of blood would seem to indicate that the fluid is derived from the tumour.) It is never present when there are extensive adhesions; it is more common in pedunculated than in either variety of sessile tumour. May this be taken to indicate that the exudation of fluid is the result of a peritoneal irritation caused by the free movement and bare surface of the pedunculated tumours, the outer surface of which is uncovered by ovarian tissue? On the other hand, it is possible that the fluid may be derived from the surface of the tumour or from its pedicle; and, finally, the exudate may not be inflammatory but nutritional in nature.

It is noteworthy that among Briggs and Walker's cases there was no instance of an endothelioma—a variety of solid malignant tumour which has lately received a good deal of attention. Barrett (*Surg. Gyn. & Obst.*, May 1907) has collected eighty-four cases from the literature, and adds one of his own. In external appearance they very much resemble fibroids of the ovary, and give rise in the early stage to the same symptoms and physical signs, notably ascites. They are very malignant, tend to involve the uterus and to recur in the other ovary, so that when operating it is advisable to remove both ovaries and the uterus. When this is done, and the disease is got at early, the results are better.

Secondary Carcinoma of the Ovary.—The ovaries may be the seat of various forms of malignant disease—sarcoma, carcinoma, endothelioma—which may occur as a primary condition or as a secondary change in a pre-existing tumour of a benign character. Of late years attention has been directed to a still further mode of incidence, namely by

Digitized by Google

metastasis from a cancer in one or other of the abdominal viscera, notably the stomach, intestine and biliary passages. These metastatic tumours are of great interest pathologically and clinically, for unless specially looked for they are apt to be missed, and the surgeon, while dealing effectively with the primary growth, has the mortification of losing his patient some months later from the extension of these secondary deposits. In other cases the symptoms and physical signs of the primary disease are masked by those of the ovarian tumour, and in dealing with the latter the primary focus may be altogether overlooked. Secondary carcinomata of the ovary are as a rule solid tumours, with sometimes softened degenerated areas, and are very often bilateral. They are usually, but not invariably, associated with ascites, and may attain a size as large as an adult head and be easily palpated from the abdomen; pain of a spasmodic character is also a common symptom.

In recording five cases of ovarian cancer secondary to cancer elsewhere in the abdomen, Goullioud (*Rev. de Gyn. et de Chirurg. Abd.*, April 1907) gives a short review of the work already done on the subject, pointing out that Krugenberg was the first to direct attention to the condition. He stated that the tumours were nearly always bilateral. They might occur in women of any age, and were of comparatively slow growth; in consistence solid with softened degenerated areas, and histologically characterised by a great abundance of fibrous tissue, in the meshes of which were large and small epithelial cells, many degenerated or in a transitional state. Since Krugenberg's paper a good many cases have been recorded, Schlagenhauer having collected seventy-nine from the literature. In these seventy-nine cases the primary focus was in the stomach in sixty-one; intestine, ten; gall-bladder and ducts, seven; and suprarenal capsule, one. In Goullioud's own cases the seat of the primary lesion was as follows:—Stomach, two; sigmoid flexure of colon, one; descending colon, one; gall-bladder, one. Stickel (*Zeit. f. Gyn.*, March 1907) in a series of thirteen cases found the primary focus to be situated in the stomach in eight; ascending colon in one; and the breast in four. Briggs and Walker (*Jour. of Obst. & Gyn. of the Brit. Emp.*, February 1908), in the course of their paper on forty-seven cases of solid ovarian tumours, mention that of eight carcinomata seven were bilateral and secondary to primary malignant lesions situated as follows:—Breast, two; rectum, one; cæcum, one; decending colon, one; small intestine, one; in the seventh case the site was not determined. Metastatic involvement of the ovary as distinct from direct invasion is fairly frequent in cancer of the body of the uterus; but an interesting case is recorded by Taussig (*Am. Jour. Obst.*, June 1907) where this occurred in a

Digitized by Google

cervical epithelioma, the explanation doubtless being that there was a slight extension of the squamous epithelium up into the body of the uterus. The course of the lymphatics from the cervix through the lower part of the broad ligament accounts for the rare involvement of the ovary in a pure cervical cancer.

The prognosis of these cases is extremely bad. In Goullioud's series all died within a few months in spite of apparent total removal of both primary and secondary lesions. Of Briggs and Walker's cases one died in a week, six lived for six months, and one for three and a half years after operation. A generalised abdominal cancer or metastases in pleura and lung is a frequent termination.

As regards the pathology of these secondary cancers, a great variety of appearances is met with, and many have been erroneously diagnosed as primary tumours, while others have been described as sarcomata, as was done by Krugenberg when he first wrote on the subject. All are characterised by the presence of an abundant dense connective tissue. In Briggs and Walker's cases the microscopic appearances exactly corresponded to those of the original tumours—scirrhus, adeno-carcinoma or colloid cancer, as the case might be. Stickel also had no difficulty in determining the nature of the primary lesion from an examination of the secondary deposits, but Goullioud is uncertain, in two at least of his cases, as to whether he is dealing with a secondary growth in the ovary or a primary ovarian cancer associated with, but independent of, colon cancer. This point, he says, can only be determined by an expert pathologist who has had the opportunity of examining both the primary and the supposed secondary growth.

The method of extension of the disease to the ovary is an interesting problem. It has generally been accepted that it is by a process of grafting of detached epithelial cells from the surface of the primary focus on to the affected organ. While these grafts may grow on any organ, the ovary seems to be a specially suitable site. According to Kraus this is due to the fact that at each ovulation a raw surface is left on the surface of the ovary, and it is at this point that the graft first takes, the primary nodules thus forming in ruptured Graafian follicles. On the other hand, Stickel believes that the invasion of the ovary is almost invariably through the lymph or blood stream, in the former case the invasion taking place through the retrograde stream in the retro-peritoneal lymph channels. In most of his cases he found marked infiltration of the lymphatics at the hilum of the ovary. In the cases secondary to mammary cancer this infiltration was not present, and he believes that in these the metastases occurred through the blood. Bland Sutton (*Brit. Med. Jour.*, May 1906) believes that the spread is due to dissemination of the cancer cells over the peritoneal cavity, and

Digitized by Google

this even in the cases of mammary cancer, the cancer cells finding their way through the fascial layers into the retro-peritoneal tissue below the ensiform cartilage and thence into the peritoneum. Goullioud is inclined to adopt Tripier's view that the secondary growths are not due to an actual transference and grafting of the cells of the primary tumour, but rather to the action of some secretion or exudation which, acting on the tissues of the ovary, sets up a new growth; the latter, while generally resembling the primary growth, may differ widely from it.

While there are these differences regarding the pathology of the condition there can be no doubt as to the clinical facts, from a consideration of which Stickel draws the following conclusions:—(1) In every case of cancer of the breast, stomach, gall-bladder or intestine, examine carefully the pelvic organs before performing a radical operation. (2) The ovaries may be affected when the peritoneum is still free from metastases and no retro-peritoneal glands can be found. (3) Every ovary which is nodular is to be regarded as suspicious. (4) In the presence of double cancer of the ovary thorough investigation must be made for the primary seat of disease in the other abdominal organs.

PUBLIC HEALTH.

By WILLIAM ROBERTSON, M.D., D.P.H.,
Medical Officer of Health, Leith.

A Note on Milk Legislation.

If the promised milk legislation, as embodied in Mr. Gulland's Bill, will secure for us uniformity in administrative control, it will do much. It must be confessed we are yet far from the ideal milk supply. Moreover, we are not armed with sufficient power to insist upon purity all round. No matter how perfect the control of the milk traffic may be in one community, matters can never be satisfactory if a neighbouring district supplies large quantities of milk collected from imperfectly inspected sources. What holds good in one county one must expect to find in another. Unless there be uniformity there cannot be a wholly satisfactory milk supply. In England, especially, drastic powers are afforded by special legislation to protect the city consumer against milk drawn from tuberculous udders found among country cows. Nearly every large city has its veterinary inspector deputed to systematically examine milk cows so as to ensure the early detection of tuberculous udders among them. County districts must adopt similar preventive measures. No less than 10 per cent. of the samples of milk introduced

Digitized by Google

to some of our large centres of population have been found to contain tubercle bacilli. This is not comforting information, when one is assured by the Second Royal Commission on Tuberculosis that the bovine form of the disease is, despite Koch's pronouncement to the contrary, communicable to man. It is justifiable to demand that what the cities do for the safeguarding of milk supplies *must* also be done by rural authorities. In some rural districts milk is collected under most unsatisfactory conditions. Thus it happens that filth-laden milk is sent to the city consumer in large quantities. So serious had the menace to the city consumer become, that Parliament readily granted authority, in many cases, to city officials to visit offending country farms. This should not have been necessary if the country cowshed and its contained herd were kept in strict conformity with well-devised regulations. The rural official is inclined to resent the interference of his fellow from the city, but the condition of affairs became now and again so intolerable that something had to be done. Any intended legislation must, to be satisfactory, correct the anomaly of what might be termed lop-sided administrative control. It may be urged, with truth, that cows should only be kept in country districts where they may be privileged to pasture during the greater part of the year. On the other hand, it can be argued, with force, that it is better to have well supervised town cows yielding milk for human consumption, than it is to be dependent upon supplies from animals that altogether escape systematic inspection.

Too much importance is attached to the elaboration of cowsheds. Each responsible official has his own particular ideas as to lighting, ventilation and internal disposition of fittings. No statutory enactment indicates what is intended by "adequate ventilation." When ventilation is left to the cowfeeder, it is seldom satisfactory; it is invariably most inadequate. Regulations inform the cowfeeder that each cow ought to be provided with a minimum of 3 square feet of window space. No matter how many windows a house or cowshed may boast, the inmates cannot be expected to thrive satisfactorily if the windows are constantly kept closed. So we have a ridiculous anomaly being perpetuated in town and country cowsheds. There is a standard for lighting, but none whatever for ventilation, if we except the vague term "adequate." The question of what is adequate ventilation is most material, since the dairyman shudders at the suggestion of cool interiors. Yet he advances objection to threatened legislation against tuberculous animals. He says, if tuberculous animals are to be confiscated, compensation must be paid for any consequent loss of his stock. This is very reasonable at first blush, but what guarantee is there against the prevention of spread of the disease among the remain-

Digitized by Google

ing cows if means are not to be taken by the dairyman to maintain a healthy and vigorous herd? Veterinarians have now come to recognise that tuberculosis may be spread by specifically infected bowel discharges. The tubercle bacilli do not principally come from mucus coughed up by affected cows. The mucus containing the bacilli may be swallowed to be passed per rectum. All this gives legislation a clear guide as to its future line of action. It means that the lighting, ventilation and cleanliness of the interiors of all cowsheds must be unimpeachable. When the dairyman shows himself eager in his attempts to *prevent* tuberculosis, the time for compensating him will be near at hand. Uniformity all along the line is clamantly wanted. There need be no expectation that a good and clean milk supply will be introduced unless promised legislation declares for an equivalent to the familiar German *Streng Verbot.* which one encounters almost everywhere in the Fatherland. Another very important consideration has regard to those employed in the collection and distribution of milk. So far the only power in the hands of the Medical Officer of Health is provided when he has reason to believe that some one connected with the dairy is suffering from infectious disease. Only after suspicion is attracted to the milk supply does the official move. He has no other alternative, and when the time for action arrives, mischief has probably been wrought among the milk consumers.

During recent times a widespread outbreak of scarlet fever attacked Leith. Infection was traceable to the milk supplied by ten different milk-shops. Further investigation brought to light the fact that these milk-shops derived their supply in whole or in part from a large dairy also in Leith. A visit to this dairy led to the discovery of a milkmaid who was suffering from sore throat, a swab from which yielded genuine Klebs-Löffler bacilli. Swabs taken from the throats of the other women engaged at the dairy showed Löffler in two instances. All three persons were at once isolated and the outbreak cut short, but not until over eighty persons had been attacked by scarlet fever. The association of the Klebs-Löffler with scarlet fever opens a wide field for discussion, but the present is not an opportune moment to study the matter. The least possible time was lost in reaching the real source of infection, but not before mischief had been initiated from ten different centres.

The defect here is the lack of early notification of illness at the dairy. In Mr. Gulland's Bill certain conditions of illness are specified as demanding notification on the part of the dairyman, but one would be inclined to go even further and require notification to the Medical Officer of Health of *all* cases of indisposition. It may seem harsh to suggest it, yet the fact remains that the dairyman must be afforded

Digitized by Google

no loop-hole of escape. If specified conditions are known to him to require notification there is always the possibility that, Nelson like, he may put the telescope to his blind eye. Take the case of the dairymaid cited in connection with the Leith outbreak. She was "hidden" from view when the official visit to the dairy was made. When she was found denial of sore throat was offered; yet that maid had visited a medical man, who had prescribed suitable treatment for her inflamed fauces! Had legislation made it necessary to report all cases of illness the dairyman would have been punished for concealing the fact. As matters at present stand he could only be proceeded against if he knew or suspected that the girl had had an infectious disease.

Our infectious diseases hospitals would benefit materially were stringent rules laid down regarding the notification of every case of illness at dairy farms. The recent experience of Glasgow with its typhoid fever outbreak is another illustration which clearly indicates how necessary it is to be made aware of every case of indisposition among those handling milk supplies. Kid-glove legislation dealing with the milk traffic will be futile if anywhere attempted.

Unfortunately no law can compel dairymen to pay good wages. The remark suggests itself, because those engaged in milking and in the distribution of milk are not always drawn from the most desirable sections of our communities. Slovenly personal habits cannot be suddenly put aside to convenience an employer. Should these habits be introduced to a dairy, as they not infrequently are, the milk consumer suffers. The washing of hands between milkings is not universal. The dairyman is afraid to impose too many restrictions upon his workers, because they would resent his "quibbling" over details. If, however, statutory enactments demand cleanliness, the dairyman will not be slow to insist. All message boys should be registered with the Medical Officer of Health, and greater care will be necessary in the methods of selling milk from door to door. The system of ladling out milk from a churn exposed to manure-laden dust is most reprehensible and should be forbidden. The sale of milk in glass bottles should be encouraged, and the consumer taught by his medical attendant that milk dispensed in any other way is not satisfactory.

Lastly, a standard of permissible bacterial contamination might well be established. It should be quite possible to secure a supply of milk containing no more than 20,000 bacteria per c.c. This to the uninitiated may read like a wide latitude, but 12,000 is considered to be a very high standard of purity in a milk supply. To keep down bacterial proliferation it will be necessary to draw milk with clean hands from groomed cows, washed udders and teats, into filters covering

Digitized by Google

the milking-pail. Subsequent to removal of the milk from the cow-shed chilling of the milk will be necessary, and to maintain the purity of the fluid it must be dispensed in clean bottles.

That may appear at first sight an unduly high standard of efficiency. Does milk not demand that it shall be provided in a state as closely bordering upon sterility as is possible? There can only be one answer.

MEDICAL JURISPRUDENCE.

By CARSTAIRS DOUGLAS, M.D., D.Sc. F.R.S.E.,
Anderson's College Medical School, Glasgow.

A Fatal Case of Phenacetin Poisoning.

Toxic symptoms following the use of this well-known analgesic and antipyretic are not very uncommon, and a few cases of fatal poisoning have already been recorded. Krönig (*Berl. klin. Woch.*, 1905) published notes of a case of a lad of 17 who took four fifteen-grain powders in the course of three weeks and finally a fifth of the same strength. He now became sick, suffered from headache, and vomited; the colour became bluish, the urine passed was dark brown and contained altered blood. Death occurred on the third day after the last dose. In the same year Fraenkel published a note in the *Deutch med. Wochens.* of a girl of 17 who died a few hours after taking one gramme of phenacetin. Cases ending fatally are not very common, however, and Dr. Russow of Dorpat makes no apology for publishing another fatal case in the *St. Petersb. med. Wochens.* (neue Folge, xxv., No. 4, 1908).

The patient was a woman of 50 years, with some tendency to arterial sclerosis, but otherwise well. She took ill with shivering, muscular pains and cramps, and was ordered a full dose of phenacetin, viz. 1 grm. combined with 0·2 grms. caffeine (or 15 grs. + 3 grs. caffeine). She took this in the course of the day, and in the evening felt ill and sick, vomited, and showed extreme restlessness. The pulse was 80, respirations 28, and temperature 36·8 C., very much as before the dose was swallowed. An injection of camphor along with $\frac{1}{12}$ gr. of morphine insured a fairly quiet night. In the morning the pulse and breathing were very much the same, but the general condition of the patient was not satisfactory, and camphor and ammonia had to be given several times. In the afternoon of this day she was removed to hospital, and at 5 P.M. the pulse was 120, and the skin a blue-gray tint. At 11.30 P.M. death occurred.

The urine drawn off soon after death was the colour of porter, and fairly clear. It was acid in reaction, and yielded a good deal of

Digitized by Google

sediment. The clear filtered urine gave a copious gray coagulation on boiling, insoluble in acetic acid. The blood reactions of Heller's and the guaiac test were positive, and the addition of caustic potash turned the porter-coloured urine a burgundy red (methæmoglobin reaction). The spectroscope gave the bands characteristic of methæmoglobinuria. The deposit consisted of many tube casts covered with fine grayish particles, and of vesical and renal epithelium. There was also much dark amorphous granular debris in the urine. The albumin was 1·5 per 1000 (Esbach). The picture presented clinically here was one of methæmoglobinuria and parenchymatous nephritis. Russow points out that the dark material found in amorphous particles in the urine and adhering to the tube-casts is not, as he at first supposed (and as many authors state), hæmoglobin or hæmatin, but a derivative of hæmoglobin, as pointed out by Afavassieu (*Virch. Arch.*, Bd. 98, s. 460). The post-mortem examination confirmed the clinical findings, there being pulmonary and cerebral œdema, fatty and parenchymatous degeneration of the cardiac muscles, congestion of the liver and spleen, and parenchymatous nephritis. In conclusion the author says he does not report this case to frighten physicians from the use of phenacetin, but rather to give a warning that certain subjects are not suitable for its exhibition, viz. those with any kidney affection, dropsy, or cardio-vascular degeneration.

Death by Lightning-Stroke.

A recent number of the *Transvaal Medical Journal* contains an interesting article on this medico-legal form of death by Dr. H. A. Spencer, the District Surgeon of Middelburg. In a country like the Transvaal, visited as it is for six months of every year by violent thunderstorms, death and injury from lightning are by no means uncommon. Dr. Spencer has had experience personally of a number of these cases, and as the descriptions given in the text-books are vague and wanting in definiteness, he has set down certain clear opinions which he has formed regarding this form of injury.

Lightning, he reminds us, is simply a discharge between two electrified bodies, earth and cloud, but he insists on what we are too apt to forget, that the discharge is not only down from the cloud but up from the earth. The current is conducted as a rule close to the moist skin of the person, often tearing off the clothes and boots. If the shock is a direct one the victim may remain erect for some moments; if indirect, as when the flash glances off a tree, the person struck may be hurled some distance. If the current penetrate below the skin it comes rapidly to the surface again, often doing great damage, as the soft parts offer much resistance to its course. Banks

Digitized by Google

calculated that the soft parts of the body conducted three million times less readily than mercury and fifteen million times less than copper. On the skin it travels where sweat is most abundant—down the back in the middle line, over the chest, along the inner sides of the arms and thighs. It is here that is produced most typically that peculiar arborescent marking of the skin, a phenomenon also Dr. Spencer considers really distinctive of lightning stroke. The branching is from above down, the upper part being about the diameter of a lead pencil, the branching gradually getting finer and finer. It reproduces the branching of superficial vessels, and is really due, in the writer's opinion, to the better conduction of the electric current by the blood, with consequent destruction of red cells, and liberation of hæmoglobin. It is really not like a burn though often described as such. It fades away in a few days if the person struck survives; if death follows it turns brown. On the dusky skin of natives it shows up as a darker marking.

Another characteristic of lightning-stroke is the peculiar smell noticed, persisting for some time. This is probably due to ozone generated by the flash, and is sometimes described popularly as the "smell of the explosion." Actual burning is not very common. The tearing off of the clothes is also characteristic. They are torn off chiefly over the areas of arborescent marking, and appear as if drawn forcibly off the body from within, cut by some blunt instrument. The torn edges may show no signs of burning. As regards internal organs, the only constant change observed has been a firm contraction of the heart, especially of the left ventricle, and some congestion of the lungs.

When death occurs it is instantaneous; in those that recover there is more or less profound concussion, and afterwards a dazed sensation with a peculiar tingling of the body surface. Where there are burns on the surface they are generally associated with some metal object, such as a buckle, coin, watch, brooch or the like. Dr. Spencer gives accounts of a number of interesting cases of fatal and non-fatal lightning-stroke, and in conclusion advances the following conditions as definitely characteristic of death from this injury:—

1. The peculiar "rent" condition of the clothes and boots suggestive of being the result of great violence from within outwards, the edges of the rent showing no burning or singeing.

2. The presence of a peculiar arborescent red streak, becoming brown after death, on the skin, traceable wherever the electric fluid touched the body and often demonstrating its direction, the rent in the clothing corresponding with the position of this streak upon the body.

Digitized by Google

The following are offered as extremely probable regarding internal conditions of the body:—

3. That burning of clothes or body and singeing of hair only occur in connection with metallic objects worn or carried on the person struck.

4. That the deeper tissues offering such great resistance to the conduction of the electric fluid, wounds in those struck by lightning will be rare, but when existing they will probably not be extensive as the lightning tends to return to the surface and be conducted by the skin.

5. That internally a firm contracted heart, especially the left ventricle, empty of blood, together with engorged or congested lungs is pathognomonic of death by electric shock or lightning.

6. That the skin offers the most ready medium in the human body for the conduction of the electric fluid, probably by means of the blood in its superficial vessels, and that most cases will show only evidences of conduction by skin.

Does Radiography of the Abdominal Organs allow One to make a Certain Diagnosis of Death?

To this question M. Charles Vaillant, in a note presented to the Paris Academy of Sciences, in November last, replied in the affirmative. The stomach and bowels, invisible during life on account of their movements and transparency, become visible in the cadaver, and the explanation given by Mons. Vaillant is that in their interior after death are generated various gases, chiefly compounds of sulphur, which, under the influence of X-rays, become phosphorescent, and are able to print an image of the hollow viscera upon a photographic plate. To this explanation Dr. Beclerc in a recent number of the *Progrès Médical* (tome xviii. N. 1, 1908) takes exception, and says it is quite inadmissible. Even if under the influence of Röntgen rays such fluorescence or phosphorescence did take place in the abdominal viscera, the rays so emitted would never be able to penetrate the abdominal parietes. It would be less illegitimate to suppose that after death there was deposited on the walls of the viscera some substance of high atomic weight capable of arresting the rays in part, just as one uses subnitrate of bismuth during life.

It is not, however, necessary to seek out any peculiar explanation of the incontestable fact that the viscera can be more easily radiographed in the cadaver than in the living body. The factors which render this possible are (1) the immobility of the organs, which is an essential for a clear image, and (2) an unequal penetrability of adjacent organs to the rays so that they can be delimited by the unequal

Digitized by Google

shadows they cast. The first of these is always attained in the real dead body in the very nature of things, and the other is also gained by the bowels becoming gradually filled with gas after death, so that the intestinal mass is represented now by a multitude of small air chambers, separated from one another by double solid partitions caused by the infolding of adjacent portions of the intestinal walls. Dr. Beclerc concludes by saying that between a corpse known without doubt to be really one and a vigorous living person the radiographic differences attain their maximum, but they are at their minimum and thus may cause doubt in a person on the one hand apparently dead, with practically arrested respiration, especially if meteorismus be present, and a cadaver on the other hand, in which slight peristaltic movements take place after death, a phenomenon which all know may occasionally happen.

OPHTHALMOLOGY.

By J. V. PATERSON, F.R.C.S.,
Assistant Ophthalmic Surgeon, Royal Infirmary.

The Relations of the Inflammatory Affections of the Orbit to Disease of the Accessory Sinuses of the Nose.

During the last few years a great deal has been written about disease of the accessory sinuses. Owing to the close proximity of these sinuses to the orbit and the serious results for the eye or its adnexa to which inflammatory affections of the sinuses may give rise, the subject is of great importance to the ophthalmic surgeon. A suggestive résumé under the title given above was recently made by Professor Birch-Hirschfeld of Leipzig (*Klin. Monatsblätter f. Augenheilkunde*, January 1908). After pointing out that no conclusions can be drawn from a few cases, however carefully observed and described, Birch-Hirschfeld gives a brief summary of the more important conclusions drawn from 684 recorded cases of orbital inflammation, forty of the cases having occurred in the Leipzig clinic.

In 59·8 per cent. of the cases the inflammatory affection of the orbit had spread from one or other of the sinuses, and Birch-Hirschfeld is of opinion that a more systematic and thorough examination of the nose would have revealed the presence of sinusitis in even a higher percentage of the cases.

With regard to the sinus affected, the frontal sinus was the source of infection in 29·8 per cent. of the cases, the maxillary antrum in 21·8 per cent., the ethmoidal sinuses in 20·5 per cent., the sphenoidal

Digitized by Google

sinus in 6·1 per cent. In sixty cases more than one sinus was found diseased, *e.g.* frontal and ethmoidal in twenty-five cases, ethmoid and maxillary antrum in twelve cases, ethmoidal and sphenoidal sinuses in ten cases. In almost all the cases the type of disease was a suppurative sinusitis of acute or chronic type. The simple hydrops of the sinuses, though it may produce effects on the orbit and its contents by mechanical pressure, never gives rise to actual inflammatory trouble in the orbit. The suppurative processes usually extend to the orbit after a breach has been made in the bony wall of the sinus by caries or necrosis. Occasionally, the bony partition remaining intact, the septic process spreads to the orbit by a process of thrombo-phlebitis. In the orbit the inflammatory process may assume the form of a periostitis orbitæ, an orbital abscess, or a diffuse orbital cellulitis. Very often these forms are combined or merge into each other. In some cases the periosteum sets a boundary to the spread of the inflammation and a sub-periosteal abscess is formed. The abscess as it spreads raises the periosteum from the bony wall, and may eventually find its way to the surface. In other cases the septic process directly invades the orbital tissues. The result may be an orbital abscess, more or less localised, or a diffuse cellulitis with thrombosis of veins. For the ophthalmic surgeon, one of the most important questions to be considered is the implication of the optic nerve. Very considerable attention has of late been bestowed on this question, but there is still much to be learned. Birch-Hirschfeld is not inclined to attach much importance to peripheral restrictions of the visual field as an aid to diagnosis, but is inclined to lay great stress on the testing of the central colour perception in all cases where there is a suspicion of inflammatory trouble in the posterior sinuses. Eight cases have already been published in which the presence of a relative or absolute central colour scotoma led to a diagnosis of involvement of the sphenoidal or posterior ethmoidal sinuses. The well-known case cited by Fuchs in which this diagnosis was confirmed by the result of an operation performed by Hajek is quoted in this connection. Three cases of a similar nature have lately come under Birch-Hirschfeld's personal observation.

That an orbital inflammation is fraught with danger to the eye is well shown by the statistics. Out of 409 cases of orbital inflammation due to a sinusitis the sight of the eye was lost in sixty-six or 16 per cent. Death resulted in fifty-two cases. In these the sphenoidal sinus was affected in 28 per cent., the frontal in 16·3 per cent., the antrum in 14·6 per cent., and the ethmoid in 6 per cent. In the cases of orbital inflammation not due to infection from a sinus, the mortality was rather higher—17 per cent. in 275 cases. Thrombo-phlebitis, the most

Digitized by Google

dangerous complication of orbital inflammation, is more common in this type. Post-mortem examination revealed meningitis in thirty-four cases, cerebral abscess in fifteen cases, sinus thrombosis in six cases, pneumonia in four cases, sepsis in two cases.

The question of the treatment of sinusitis belongs to the domain of the rhinologist. Birch-Hirschfeld confines himself to a discussion of how to treat orbital suppuration. He considers that the usual method of making deep incisions into the orbital tissues with a thin knife is both ineffective and dangerous. He advises that a large incision should be made along the orbital margin, and the periosteum exposed and peeled off. In this way a subperiosteal abscess may be reached and thoroughly drained without exposing the orbital contents to infection. Sometimes the perforation communicating with the neighbouring sinus can actually be seen after the evacuation of the pus. The actual treatment of the sinus affection should, where possible, be left to those intimately acquainted with the subject.

"The Anatomical Basis of Blindness Following Orbital Abscess," by Dr. Martels, Marburg (*Archives of Ophthalmology*, January 1908).

Dr. Martels examined the eye, optic nerve and orbital tissues of a girl aged twelve years, who died of cerebral abscess due to sinus thrombosis following otitis media. Some weeks before death an extensive abscess in each orbit had been evacuated, but vision was completely lost in the right eye. At the post-mortem examination the right orbit was found to contain several abscesses lying in the funnel-shaped cavity formed by the ocular muscles. The pus lay mostly in the fatty tissue, the muscles being only slightly involved near their origin. The larger arteries of the orbit appeared normal, but the ophthalmic vein was thrombosed. The optic nerve was not pressed upon in any part of its course. Microscopical examination of the nerve showed a localised retro-bulbar necrosis due to thrombosis of the pial vessels. The central vessels were completely occluded by organised thrombi at a point about 3·5 mm. behind the lamina cribrosa. The vein was occluded for a distance of 1·6 mm., the artery for a shorter distance. Dr. Martels considers that the lesions in the vessels preceded the necrosis of the nerve tissue. The thrombotic process in the vein was not continuous with the orbital thrombo-phlebitis, and he supposes that the wall of the vein had been damaged through thrombosis of the vasa vasorum. From the vein the process might readily spread to the contiguous artery. The clinical picture as seen with the ophthalmoscope was at first venous congestion of the fundus with retinal hæmorrhages. At a later stage widespread retinal anæmia was noted, no doubt corresponding to the involvement of the central artery. Later still, a collateral circulation

Digitized by Google

appears to have been established as the arteries at the disc became better filled. In front of and behind the occluded portion the lumen of the vessels was found quite patent on microscopical examination.

As indicative of the awakened interest in sinus affections, we note that the *Ophthalmoscope* has given its readers an April number almost wholly devoted to this subject, mainly, of course, in its relation to ophthalmology. There are original papers by St. Clair Thomson, J. J. Evans, Henry M. Fish (Chicago), Sydney Stephenson and J. Howell Evans. The first two authors give records of illustrative cases. Dr. Fish's paper contains in tabular form notes of twenty-six cases of optic neuritis in which great improvement followed treatment of the diseased sinuses. The information thus given in tabulated form appears to us, however, too meagre to be of much clinical value. Cases of glaucoma are spoken of as being due to sinus disease, and as having improved after drainage of the diseased cavities. We confess to being somewhat sceptical with regard to the existence of any frequent close relationship between sinus disease and glaucoma. When towards the close of his paper Dr. Fish expresses the view that the late Professor Javal would have escaped blindness from glaucoma in his later years had he only had his nasal sinuses seen to instead of submitting his eyes to useless iridectomies, we feel less than ever inclined to agree with him. Nasal sinus disease does not give us the key to all unexplained eye troubles.

Dr. Sydney Stephenson gives full notes of three cases of malignant disease affecting the sinuses. Dr J. Howell Evans writes on "The Applied Anatomy of the Accessory Sinuses," and illustrates his paper by numerous drawings.

"The Influence of Potass. Iodid. on Incipient Cataract," by Professor v. Pflugk, Dresden (*v. Graefes Archiv. f. Ophthal.* lxvii. 2 and 3).

As many patients afflicted with cataract are seen when the disease is in a very early stage, and vision still fairly good, it would manifestly be an enormous gain if the process could be arrested. Fresh advances in our knowledge of the part played by toxines in bringing about cataractous changes in the lens may some day provide us with an effectual means of combating incipient cataract by serum therapy. Meantime certain oculists, especially in France, have made serious trial of the therapeutic effect of solutions of potass. iodide applied locally in the form of drops or by subconjunctival injection.

In the paper cited above Dr. Pflugk treats the subject from both the experimental and clinical standpoint. Experimentally, he found that iodide injected under the conjunctiva found its way into the lens substance, the readiest path of entrance being along the natural suture lines on the anterior lens surface. By injections of KI. he further

Digitized by Google

found that it was possible to arrest or prevent the development of naphthalin cataract in the rabbit. In the clinical part of his paper Dr. Pflugk tabulates fifty-five cases published by other authors (Badal, Boisseul, Verderau and others) since the year 1904, and, in addition, twenty-eight cases in which he had himself used the iodide treatment. In some of his own cases an attempt was made by the aid of drawings of the opacities to follow exactly the course of the disease under treatment. Dr. v. Pflugk in nearly all his cases used subconjunctival injections of a 1 per cent. KI. solution. Acoin was added to prevent the pain, which, according to Badal, is a great difficulty in the way of carrying out this treatment. Dr. v. Pflugk found that injections given according to his method were practically painless. The results of treatment were surprisingly good, *e.g.* out of fifty-five eyes treated, great improvement was noted in twenty-nine, improvement in eighteen, no change in seven, deterioration of vision in one case only. Ten or twelve injections were usually given before improvement was noted. The term "great improvement," as used in the above statistics, means that the difference in the visual acuteness before and after the iodide treatment exceeded 0·33.

Dr. v. Pflugk does not appear to have so much faith as some others in the local application of iodide solution in the form of drops, or by the use of an eye bath. As drops, a solution of 1-40 may be used thrice daily; in the eye bath a warmed solution of the same strength. If well borne, the strength of the solution may be gradually increased. The treatment seems worth an extended trial in many cases of incipient cataract. In the use of repeated subconjunctival injections there are, however, many difficulties. We hardly think that the manipulations would be always quite painless for the patient, while the trouble and expense might be a further deterrent.

New Books and New Editions.

The Functional Inertia of Living Matter. By DAVID FRASER HARRIS, M.D. London: J. & A. Churchhill. Price 5s.

THIS book is of the kind only written by men of a certain type of mind. Few medical men could have done it and still fewer physicists have the physiological knowledge that would have enabled them to handle some of the questions it discusses. Its general theme may be shortly described as the problem of the ages—life versus death. Dr. Harris begins by describing the characteristic property of living

Digitized by Google

matter or bioplasm as being "affectability," otherwise known as "irritability or excitability." That property enables the bioplasm to be affected by a stimulus, that is, to exhibit response, the response being usually twofold, one or more of the transformations of energy and some rearrangement of molecules in space. He points out, however, that if bioplasm possessed no other property than this it would mean "unending activity, an eternity of unrest." The counterpart and co-relation of this irritability is another quality, viz. "physiological insusceptibility." The discussion of this latter quality is the aim and gist of the book. The author calls the insusceptibility "functional inertia." He puts it thus: "Infinite affectability would give rise to infinite activity, ceaseless, unresisted, unresisting eternal action, a mode of life wholly unknown in this planet; while infinite functional inertia would represent eternal death." He points out that while the stimulus to a living tissue is responded to, yet there is a time varying from one hundredth of a second to several seconds during which there is a disregard of the stimulus. The response shows the irritability, the period of non-response exhibits the quality of inertia. He treats of that functional inertia as expressed in "latent periods, limits, insusceptibilities, rhythms" from the physiological and medical points of view. His consideration of "rhythms" is extremely important and of great interest. We all know that all life consists of action and reaction, and that those follow each other mainly in a rhythmic and cyclical manner. Especially is this the case in nervous action. This whole chapter is well worth the consideration, not only of the physiologist, but of the practical physician who is given to ask questions about the symptoms of his patient. The next chapter discusses functional inertia as related to heredity. He points out that affectability is the chief characteristic of one race, while there is an inertia of character in other races and families which is transmitted from one generation to another. "The two tendencies thus rule the protoplasm —the tendency to maintain the *status quo* and the tendency to vary, to respond to, *i.e.* to correspond with environment—the centripetal and centrifugal impulses of Haeckel are functional inertia and affectability." He says "functional inertia is the mechanism of heredity." In the next chapter Dr. Harris applies his doctrine to a still more difficult department of life when he treats of "Functional Inertia as related to Consciousness: Psychic Inertia." He quotes Faraday with approval when that scientist says that "there is a quality in mental action which opposes every new influence and strengthens every old one and that this applies to the corporeal and spiritual parts of our nature." He describes it as a "never-failing attendant on the mind." Dr. Harris maintains that there is more than an analogy between physical and

Digitized by Google

psychical inertia. Inertia being bound up with the molecules of living matter underlies all metabolism and therefore all functions, both those with and those without a conscious correlate. There is high affectability and little inertia in the child mind, while, as age proceeds, the qualities are reversed, so that in the old man we have little response to stimuli. The author points out that "by functional inertia character is unfolded as the great 'ground-tone' of a life." "Men of strong character, refusing to be acted on by the environment, deaf to her charming, blind to her attractions, insensible to her touch"—this being character. "From what we know of Oriental races we should be safe in assuming that their stationary position as compared with the nations of the West is due to their possessing so much more psychic inertia relatively to affectability than the European." He points out that it is through the female parent rather than through the male that those conservative tendencies are transmitted "which we have learned to identify with anabolic inertia." He refers to the lack of correspondence between sensation and stimulus as formulated in the Weber-Fechner law as being an example of psychic inertia. He lays down the proposition that "educability is psychic affectability, in-educability is psychic functional inertia." Dr. Harris presents his theory to explain some of the phenomena of mental disease, such as *folie circulaire*, which has little reference to the environment, being a definite organic rhythm. He is scarcely right in his theory that melancholia is simply "a great diminution in affectability coupled with an abnormal increase of psychic inertia." Such a theory takes no account of the intense mental pain which is the essence of melancholia and which is very far indeed from a diminution of affectability. In the end of the book Dr. Harris gives a convenient summary of his views, and while he gives credit to many previous authors for having stated views somewhat like those he has elaborated in this book, he claims that "no one had, however, gone so far as I felt justified in doing, viz. to attribute the property of inertia to the biogens of living molecular constituents of protoplasm."

This book is one that cannot be perused without making an educated man think and ask questions. In the medical profession most of us would be the better every now and then to read such books which are philosophical in tone and try to get at the root of the questions which we have to face every day. Dr. Harris is not so foolish as to try and explain life, but he does try to explain the groundwork of its phenomena. No one but a thinker of a very scientific turn of mind could have written such a work.

Digitized by Google

Diseases of Occupation from the Legislative, Social and Medical Points of View. By THOMAS OLIVER, M.D., F.R.C.P. Pp. 427. London: Methuen & Co. 1908. Price 10s. 6d. nett.

THIS volume is the result of a vast amount of labour and research, and will fully repay careful study. The author has been a member of several parliamentary commissions appointed to investigate the conditions of various dangerous occupations. As a hospital physician he has had a large practical experience of the treatment of diseases produced by occupation, and he has made careful research into the causes of such diseases; he has gathered information from all quarters of the globe, and is well qualified to write with authority. He compares the conditions of labour in the good old sleepy times with those of modern rush and electrical speed.

The volume begins with a synopsis of legislation from factory legislation at the beginning of last century down to The Workmen's Compensation Act of 1906. After considering factors contributing to industrial diseases and accidents (among which one of the most important is alcohol), the author treats in detail of diseases due to gases, high and low temperatures, various atmospheric pressures, *e.g.* high altitudes, caissons, &c., chemicals, metallic poisons, organic and inorganic dust, parasites, micro-organisms, electricity, &c. As the title indicates, these are discussed from the legislative, social and medical points of view. They are also carefully considered from the scientific as well as from the utilitarian side. Those who have to treat diseases due to occupation will find treatment carefully considered and founded on a scientific basis, and those who have to advise in relation to compensation will find a helpful discussion of points of difficulty in pressing and in opposing claims. There is a very full and useful index.

Diets in Tuberculosis: Principles and Economics. By NOEL DEAN BARDSWELL, M.D., M.R.C.P., F.R.S.(Edin.), Medical Superintendent, King Edward VII. Sanatorium, and JOHN ELLIS CHAPMAN, M.R.C.S., L.R.C.P., Medical Superintendent, Coppin's Green Sanatorium. First Edition. Pp. 184. Oxford Medical Publications. London: Henry Frowde and Hodder & Stoughton. 1908. Price 6s. nett.

WE welcome this book as a most important contribution to the study, not only of what diet is suitable for patients suffering from tuberculosis, but of the question which is becoming increasingly

Digitized by Google

important, as to how patients after leaving sanatoria can be given a diet sufficient to maintain them in good health at a moderate cost. That is really a very much more important question than the former one. Sanatoria for the poor are generally run to a certain extent upon a charitable basis, and this allows of a certain elasticity in the dietary; but when the patient returns to his own home he has to do the best he can, and that is often a poor best. The book represents the result of a study extending over seven years, and carried out in the various sanatoria with which Drs. Bardswell and Chapman have been connected. The works of others in regard to the general question of diet, and that for consumptives in particular, is fully discussed and has been admirably utilised. The authors discuss carefully the relative merits of over-feeding and sufficient feeding, and come to the conclusion, which is now fully justified by the great mass of sanatorium experience, that the former is a mistake; at least, in cases in which it imperils the patient's digestion. The diets adopted at different sanatoria are discussed, both as to their constituents and their nutritive value. And then follows the most interesting chapter in the book, on the comparative economy of the cheap food-stuffs, which is full of important practical hints. The principles deduced from such a study are next applied to the construction of an ideal dietary, and here again the eminently practical character of the book is retained. Experiments were made on treating consumptives with a meat-free diet. The authors conclude that in the treatment of patients with early disease, who have good digestions, proteid from vegetable sources is just as valuable as that derived from animal sources; but that in the treatment of patients with advanced disease, and those with poor digestions, a meat-free diet is not found to be satisfactory, largely because of the bulky character of the diet, and the greater demand made upon the digestion. The great advantage of such a diet is its small cost. The last part of the book is taken up with the endeavour to find out what diet will maintain the health of consumptives at the lowest possible cost. Four diets are discussed in detail, the cost of which varies from 11½d. to 7½d. a day. These are all found to give satisfactory results. The book terminates with a set of directions to patients on the kind of food which they should buy, and how it should be cooked, which is of extreme value, as it has been fully tested and found to give satisfactory results.

We heartily recommend the book to all who are interested in the treatment of consumption, and everyone will find valuable information in it.

Digitized by Google

Third Annual Report of the Henry Phipps Institute for the Study, Prevention and Cure of Tuberculosis. Philadelphia. 1907.

To say that the work done at this institute is being maintained at that high level which has been the feature during previous years is the highest praise we can give it. And this the report recently published fully proves to be the case. The work done by the institution may roughly be classed under two heads: first, general; second, clinical and pathological. Under the former heading it is interesting, although not surprising, to find further corroboration of the view that the Celtic race surpasses all others in susceptibility to tubercular disease. It will, however, be news to a great many that the Hebrew race, hitherto quoted by many writers as immune, stands high up in the list of races susceptible to the disease, being third from the top; and yet, although vast numbers of the Jews contract the disease, it is an extremely rare circumstance for it to end fatally. Temperance advocates will not be pleased to learn that the majority of those coming under treatment at this institute were not addicted to alcohol, and that the observers there have arrived at the conclusion that alcohol neither cures, prevents, nor predisposes to the disease.

To attempt to give an adequate idea of the great interest and the high value of the second portion of the work is quite out of the question under the present circumstances. Isolated points of interest are the following:—What we have been accustomed to regard as a very rare occurrence, namely tubercular ulceration of the tonsils or pharynx, was found in 12 per cent. of the cases. Out of twenty-eight appendices subjected to histological examination over 53 per cent. showed tubercle bacilli present. And similarly bacteriological examination of the contents of fifty different pulmonary cavities disclosed streptococci and bacillus coli each in 74 per cent., and one of the staphylococcal forms in 49 per cent. of their number.

The report is a faithful and comprehensive record of most valuable work, and one which no man claiming to take any special interest in the study of tuberculosis, and the manifold problems with which it is invested, can afford to be without.

Diseases of the Lungs. By ROBERT H. BABCOCK, A.M., M.D. Pp. xix. + 809. London: Sidney Appleton. 1907. 25s. net.

THIS is a comprehensive treatise, and forms a worthy companion to the author's volume on *Diseases of the Heart and Arterial System*,

Digitized by Google

published in 1903. In his preface he indicates the amount of labour required during three years in its composition, and a perusal of many sections shows that here we have no mere example of book-making. Dr. Babcock's personal experience is stamped on every page, and while he makes no claim to originality in method, and enters into no wearisome discussion of unfounded theories, we feel that we are being spoken to by a fresh and vigorous mind, by a man who puts down in black and white what he considers the truth, the whole truth, and nothing but the truth. His candour comes out in the relation of cases from which he has learned by a faulty diagnosis. The reader may thus, if his memory is good, be saved from similar slips. The clinical examples are very numerous and illustrative, and they are related in a pleasantly readable style, the gist of the cases being seized without unnecessary detail—such a method is peculiarly well adapted to a work intended for the genera practitioner. Pulmonary tuberculosis naturally fills a large portion of the treatise, over 200 pages being allotted to it. In regard to its etiology, one notes an apparent inconsistency on page 423. Under the heading "Natural Lack of Tissue Resistance" he says, in one place: "I do not any longer believe in congenital predisposition (*i.e.*, tuberculous diathesis) as the main, or even an important etiological factor," and in another: "I still cling to the view that by reason of an inherited or congenital weakness of constitution the descendants of tuberculous forebears are more liable to develop pulmonary phthisis than are children of a more rugged stock." Treatment of this disease (as indeed of all others) is very fully dealt with, and the latest developments are discussed. Another very valuable section is that on acute fibrinous pneumonia. He is against the use of oxygen, believing, from his own experience, that in an abundant supply of cool pure air we have a means of cardiac stimulation fully equal to the inhalation of oxygen. Among the other subjects we may note, with special commendation, bronchitis, asthma, hæmoptysis, fungous diseases, malignant growths and diseases of the pleura. The index is copious, and the illustrations (104 in the text and 12 coloured plates) are admirably executed.

The Opsonic Method of Treatment. By R. W. ALLEN, M.B., B.S. (Lond.). Pp. 138. London: H. K. Lewis, 136 Gower Street. 1907. Price 5s.

UNDER the above title the author presents an interesting and, on the whole, excellent volume. In it he describes the method of opsonic

Digitized by Google

estimation, the preparation of vaccines and the manner of conducting vaccine therapy controlled by the opsonic index. The most unfortunate part of the compilation is probably its title. The opsonic index in any particular case is an aid to diagnosis, and, where relied upon, an additional guide and control of treatment. But to speak of the opsonic method of treatment is surely either a contradiction in terms or an absolutely meaningless formula.

Light and X-ray Treatment of Skin Diseases. By MALCOLM MORRIS and ERNEST DORE. Pp. 172. London: Cassell & Company. Price 5s.

THE late Professor Tait is credited with having defined a popular lecture as "a lecture by a person who knew little about a subject to others who knew less, so as to enable them to talk to those who knew nothing as if they knew something about the subject." Some such definition might be applied to not a few of the books which have been written upon this subject. But it is certainly not applicable to the one now under review. All through the book one sees the evidence of the thoroughly practical, critical spirit with which Mr. Morris approaches everything. The experienced worker can read between the lines and see that Mr. Morris has had the same difficulties as he has had, and that he has shown his usual ingenuity in surmounting them. Although the authors speak very favourably of the Finsen method, they sum up their conclusions in the introduction by stating their belief that "Finsen has made a most valuable addition to our therapeutic resources in dealing with certain diseases of the skin, but, like every other remedy, his method is neither infallible nor free from serious drawbacks."

In discussing the application of X-rays we are interested to note that, in the authors' opinion, a simple non-regulating tube with a single anode is as good, or better, than any; we have come to the same conclusion.

In the treatment of lupus by X-rays Mr. Morris seems to have been peculiarly unfortunate in the production of telangiectasis. Everyone has seen these developed more often than he would like, but our experience is that they are not so invariably present as Mr. Morris seems to suggest. He believes the best results are got in lupus from a combination of the Finsen method and the X-rays. Discussing the treatment of lupus erythematosus, he says: "On the whole the results seem to be uncertain, and can scarcely be considered an advancement on the older method." Sometimes violent reactions with extension of the disease have resulted, though cases have been cured.

Digitized by Google

On rodent ulcer, while admitting efficacy of the treatment, Mr. Morris adds a word of caution against taking too optimistic a view of the final results. In advanced cases our experience agrees with his, that when the bone is affected the outlook is not so good, though later on he says that, where surgery is impossible, the X-rays give the only chance of arresting or removing the growth. Incidentally he says that "caustics (lactic acid or arsenical paste, &c.) are recommended by some, but in our experience are of little use, and may aggravate the disease." With this we do not agree. If they are of little use they will aggravate the disease, but if they are used freely excellent results may be obtained.

Speaking of Paget's disease, while the opinions of some are quoted to the effect that the majority of cases have shown favourable results, other authorities are quoted who hold that immediate amputation is the best treatment, and we are inclined to think that Mr. Morris agrees with this, as we certainly do. In the treatment of keloid the X-rays have proved of some value, their effect in easing pain being very marked. The light treatment was less satisfactory. In the treatment of hypertrichosis great caution is recommended. Cases which at first appear highly successful may eventually develop pigmentation, telangiectasis and atrophy. In the treatment of vascular nævi the authors appear to have no personal experience. Some foreign cases are quoted, but the cases reported by Levack in this *Journal* in July 1903 have escaped their notice. The authors have seen warts disappear completely under the X-ray treatment, but they do not recommend the method.

Ringworm.—The chapter on this commences with the statement that cases of ringworm treated with the X-rays were first shown by Whitfield at the Dermatological Society of London, in January 1903. (The statement is literally correct, but a case was shown at the Medico-Chirurgical Society of Edinburgh by Dr. Norman Walker on June 5, 1901). This proves the most interesting chapter, as it deals with the most recent use of the rays, and the difficulties and the dangers of the method are fully considered. All practical workers have experienced the same difficulties, notably in the case of children where the whole head is affected, and much will require to be done before perfection is reached. We quote and endorse one sentence: "All of these devices were more or less unsatisfactory, on account of the liability of the apparatus getting out of position, and the variation in the shapes of children's heads." In spite of the difficulties the results were successful, both in 52 cases treated without, and in 18 treated with Sabourand's pastilles.

The authors have had good results in the treatment of acne, though

Digitized by Google

they note that sometimes the disease appears to be aggravated. One case of acne necrotica was successfully treated. The reference to the treatment of favus displays the usual unfamiliarity with this disease always shown by observers not fortunate enough to live in Edinburgh or in Russian Poland. We have the astounding statement that, while the hair can be removed as in ringworm, scutula appears to be "less easily dealt with," and some doubt is expressed whether the cures recorded were not due rather to carbolic acid applied after epilation. Fully as we recognise the great benefits of the new treatment of ringworm, it should never be forgotten that in time ringworm will cure itself. Favus, when once fully developed on the scalp, was practically incurable before the possibilities of the X-rays in its treatment were recognised.

The authors agree that in some cases of psoriasis very good results may be got from exposure to the rays, and, when the disease is localised, they seem to infer that the treatment is justifiable. Curiously, they omit all reference to obvious drawbacks in applying the rays to the whole surface.

The last important disease referred to is sycosis, of which they say: "There can be no doubt that sycosis, either of hyphomycetic or of coccogenic origin, is, as a rule, amenable to the X-ray treatment." In the qualifying sentences which follow we note between the lines familiar difficulties—"the beard region is more sensitive to the rays than the scalp"; "permanent results are not always obtained"; "the results are better in tinea than in coccogenic cases . . . owing to the difficulty of getting rid of the cocci in the skin." An extensive bibliography completes a little book which we have no hesitation in describing as the most sensible which has yet appeared on this subject.

The Ophthalmoscope: a Manual for Students. By GUSTAVUS HARTRIDGE, F.R.C.S. Fifth Edition. London: J. & A. Churchill. 1907. Price 4s. nett.

THIS popular little manual on the ophthalmoscope has reached in the comparatively short space of 14 years a fifth edition.

The arrangement of the book is simple and systematic, and its size is such that it can conveniently be carried in the pocket and used for reference at the clinique. The present edition has been thoroughly revised and some new materials added, which brings it up to date and makes it a valuable guide for ophthalmoscopic work.

Digitized by Google

THE SCOTTISH MEDICAL AND SURGICAL JOURNAL.

Editorial Notes and News.

THIS is the last number of *The Scottish Medical and Surgical Journal* in its present form. Since its foundation in 1897, in maintenance of the principle that medical journals should be owned and controlled by the profession, it has pursued its career in a manner which we hope has not been unappreciated.

When, however, *The Edinburgh Medical Journal* became the property of certain members of the profession it was felt that there was no longer any ground for perpetuating the existence of two journals, and negotiations were entered into with the proprietors of that journal. These, we are glad to say, have been successfully concluded, and in July a combined journal will appear, under the editorship of the senior editors of the respective journals. We think it only right to make generally known how much the profession owes to Mr. Joseph Bell, whose incomparable tact as Chairman of the negotiating meetings smoothed over many difficulties. We think there is every reason to look forward with confidence to the future of the new journal, which will be published by Messrs. Green.

University Regulations. IN Professor Greenfield's letter, which appears further on in the *Journal*, allusion is made to a regulation, or rather to the want of a regulation, in connection with the curriculum which is constantly produced as an irremovable difficulty in the way of many necessary reforms.

It is the statement that the University has no power to determine the order in which students shall attend classes, and, carried to its full absurdity, this means that if any medical student chose to commence his curriculum with the classes, say, on Operative Surgery and

Digitized by Google

Diseases of the Ear, he is at liberty to do so. As the statement is frequently repeated by members of the Senate, we are, of course, bound to admit its correctness, but we would like to know what authority would interfere if the University were to assume this power which everyone agrees it ought to have. No one with a grain of common sense could possibly object to reasonable regulations on this matter, and it would be more dignified for the University to act itself than to have the matter forced on it by that most useful reforming body, the Carnegie Trust.

Retirement of Professor Crum Brown.

It has been an open secret for some time that Professor Crum Brown contemplated resignation, and he formally intimated it to the University Court at its recent meeting. He carries with him into his retirement the affection and respect of all who have been associated with him, along with the hope that he may long enjoy his well-earned leisure.

A vacancy in the Chair of Chemistry opens up a number of questions. Chemistry has increased so enormously, and has become of so much importance in so many different professions and trades, that we do not suppose the authorities expect to get one man who will undertake all the duties. In the first place it is exceedingly unlikely that any medical man has sufficient knowledge of chemistry nowadays to warrant his applying for the chair, and thus chemistry will join the increasing list of the pure sciences in connection with medicine. We are as convinced as anyone that a certain broad knowledge of chemistry is an excellent education, but the opportunity of a vacancy should surely be taken advantage of to so arrange the classes that those students who are looking forward to a medical career might have their chemistry taught them with that in view, and should not suffer from their association with science, agricultural, and engineering students, to whom the subject appeals in an altogether different way. It would be a most desirable thing to get the most distinguished living chemist at the head of the department. But he should be *primus inter pares*, and medical, scientific, agricultural, &c., chemistry should be taught to the students in these branches by separate specially qualified teachers, more or less under his direction.

There are, of course, we know, some who would remove chemistry altogether from the regular medical curriculum, and put it into a preliminary scientific course, and we have not much doubt that this will before long be put seriously forward. It will involve such radical changes, and will arouse so much opposition, that there will be a long fight before it is carried, and we believe that the method we have

Digitized by Google

suggested above is one which could be easily carried out, and would result in a considerable improvement in the education of our students.

Ruchill Hospital Management.

THIS question has reached a stage which no doubt many would gladly regard as the last of a most unfortunate matter. The result does not reflect credit on the Corporation. The procedure has not been such as one had a right to expect from the representatives of such a city as Glasgow. It will be remembered that the Corporation agreed to the appointment of a commission by the Local Government Board to inquire into the matters in dispute. After a long and careful examination of all the questions involved, this Commission made their report, which, together with a communication from the Local Government Board in reference thereto, was presented to the Glasgow Town Council. Certain recommendations were made. It would not, we think, have been difficult to act at once on the findings of the Commission, especially as by so doing no very drastic action would be required. But the members of the Health Committee felt, and without doubt rightly so, that some of the findings amounted to adverse criticism of them, and they thereupon proceeded to sit in judgment on themselves. The Health Committee and its Sub-Committee on Hospitals took evidence, and after labouring for a long time, and after frequent pronouncements that their labour was ended, they at length delivered their report to the Council. It had been found impossible, and this is so far creditable, to arrive at unanimous recommendations, so that there were majority and minority reports.

1. The majority found that no blame attached to the Medical Officer of Health. The minority dissented from this, though not strongly.

2. The majority recommended that the Medical Superintendent should be asked to send in his resignation. The minority that he should be put on probation for six months.

3. The majority considered that the matron's conduct was not worthy of censure. The minority considered the reverse, while one member recommended that she should be dismissed.

4. The majority recommended that as the assistant physicians were dismissed because of disobedience to rules, they should not be reinstated. The minority strongly recommended their reinstatement.

Attached to the report is a letter from the Medical Superintendent complaining that evidence was taken in private reflecting on him, which he had no opportunity of answering.

The meeting of the Town Council to consider these reports was protracted and stormy. By a majority it arrived at decisions in accordance with the majority report, except in so far as the Medical

Digitized by Google

Superintendent was concerned. In his case the minority report, that he should be put on six months' probation, was carried.

A good deal of feeling has been aroused, in particular the treatment of the assistant physicians, to whom in the first instance the public were indebted for the disclosures of the bad conditions prevailing at Ruchill, has met with general condemnation, and there is little doubt that the last word has not been said on the subject.

Glasgow Royal Infirmary Post-Graduate Course.

CLASSES are being conducted by various members of the staff during May.

Glasgow Maternity Hospital.

THE new hospital was opened on 29th April by the Duchess of Montrose, in the presence of a large and representative gathering. Of the £80,000, which was the estimate for the building and equipment, over £50,000 have already been subscribed. There is accommodation for 104 obstetric cases, and the provision made both for the practice and teaching of this important branch of our profession is, it is almost needless to add, in accordance with up-to-date and scientific requirements.

The following is the obstetric staff:—

Physicians—Professor Cameron, Drs. Jardine, Monro Kerr, A. W. Russell.

Assistant Physicians—Drs. M'Bryde, Shannon, Turner, Carstairs. Miss Lawson has been appointed matron. The old Maternity Hospital is to be converted into a hospital for gynecological cases, and when this is carried out a separate staff will be appointed.

Royal College of Physicians of Edinburgh.

A QUARTERLY MEETING of the Royal College of Physicians of Edinburgh was held on Tuesday, 5th May 1908, Dr. Playfair (Vice-President) in the chair.

The Vice-President, at the beginning of the meeting, referred to the great loss which the College had sustained in the death of the President, Dr. C. E. Underhill, and submitted a minute of sympathy, which was adopted and sent to the relatives.

George Douglas M'Rae and Harold Sherman Ballantyne were introduced, and took their seats as Fellows of the College.

George Herbert Rae Gibson, M.B., Ch.B., Edinburgh, and Thomas Goodall Nasmyth, M.D., D.Sc., D.P.H., Edinburgh, were admitted to the membership of the College.

The Registrar reported that since the last quarterly meeting thirty-four persons had obtained the licence of the College by examination.

Digitized by Google

The Curator's report regarding the research and reporting work undertaken in the laboratory during the last year and the expenditure incurred was submitted. The report showed that thirty-three workers had been engaged in research, that 3022 specimens had been reported on, being an increase of 291 on the number for the previous year, and that the expenditure had amounted to £1060, 5s. 10½d. The report was adopted by the College.

Dr. Norman Walker was re-elected as representative of the College on the Conjoint Committee of Management of the Triple Qualification.

It was intimated that Dr. Frederick W. Mott had been appointed Morison Lecturer for the ensuing session.

Royal College of Surgeons of Edinburgh.

At a meeting of the College held on 18th inst. the following gentlemen were elected Fellows:—Leo Ferdinando Bianchi, L.R.C.S.E., M.R.C.P.E., D.P.H., Edinburgh; Walter Henry Ormonde Garde, L.R.C.S.E., Staff Surgeon, Royal Navy; John Langton Gilks, M.R.C.S. Eng., L.R.C.P.Lond.; Dirk Jacob Hugo Hamman, M.B., Ch.B., Cape Colony; William Claude Horton, M.B., Ch.B., Birmingham; John Jardine, M.B., Ch.B., D.P.H., Penicuik; James Blacklay Lockerbie, M.B., Ch.B., Dumfries; George M'Neill, M.B., Ch.B., St. Andrews; Donald Murray Ross, M.B., M.R.C.S.Eng., L.R.C.P.Lond., Melbourne; Charles William Smith, M.B., L.S.A., Sheffield; and Raymond Herbert Swindells, M.B., Ch.B., Fairfield, near Manchester.

The medal and set of books presented to the College by Colonel William Lorimer Bathgate, in memory of his late father, William M'Phune Bathgate, F.R.C.S.E., Lecturer on Materia Medica in the Extra Academical School, was awarded, after the usual competitive written examination in materia medica, &c., to Miss Lucy Mary Muir, 12 Buccleuch Place, Edinburgh.

TRAUMATIC ASPHYXIA.

By Sir GEORGE THOS. BEATSON, K.C.B., B.A.(Cantab.), M.D.(Edin.), Surgeon to the Glasgow Western Infirmary and to the Glasgow Cancer Hospital.[1]

As cases of so-called "traumatic asphyxia" are not of common occurrence, I have thought that it might be of interest to put on

Digitized by Google

record a short account of such a case recently under my care in the Glasgow Western Infirmary, especially as I was fortunate enough to obtain an excellent water-colour drawing of it soon after its admission to hospital, as well as photographs of it in its different stages.

The drawing and photographs show that the leading features of the condition known as "traumatic asphyxia" is *a marked discolouration of the face and neck, the skin of the parts being of a bluish-black or purple colour.* In addition, the conjunctivæ frequently present a pink bloodshot appearance from the presence of sub-conjunctival hæmorrhage.

The term "traumatic" indicates the causation of the condition, as it is invariably the result of *a forcible compression of the thorax which keeps the respiratory movements in abeyance for some moments.* In the case of my patient, J. N., who was a young man aged 24, and a miner by occupation, this forcible compression was caused by the pit cage. While working with some hutches at the bottom of the pit-shaft he was caught by the pit-cage as it slowly descended, and almost completely doubled up. His body was compressed antero-posteriorly, the shoulders being crushed forwards and downwards on the abdomen and pelvis, and he was kept in this position under the cage for about three minutes before he could be released. During this period his sensations were that he felt "as if all the blood in his body was coming out at his head."

When admitted to Ward 20, Western Infirmary, at 5 p.m. on February 11, 1907, two hours after the accident, the patient was conscious and showed no special signs of "shock." His pulse was 100, his respirations 28, and his temperature normal. There was great swelling of the face and neck, with marked congestion amounting to lividity, this latter being much deeper in tint round the eyes and mouth. The conjunctivæ were bloodshot, and there was special fulness of both upper and lower eyelids, while a certain amount of proptosis oculi was present. The lips and tongue were greatly swollen, and under the tongue anteriorly there was a large hæmatoma. The line of demarcation of the discolouration anteriorly was not absolutely sharp and defined, but it ended practically in the neck, and the lividity did not extend to any extent below the clavicles. (See Fig. 1.) Posteriorly there

[1] Read before the Glasgow Medico-Chirurgical Society on April 5, 1907.

Digitized by Google

SIR GEORGE BEATSON'S CASE OF TRAUMATIC ASPHYXIA.
FIG. I.

Digitized by Google

Digitized by Google

FIG. 2.

Digitized by Google

Digitized by Google

FIG. 3.

Digitized by Google

Digitized by Google

was present on each side of the middle line of the neck a distinct congested area, which roughly outlined the trapezii muscles, especially the left one. (See photograph, Fig. 2.) Examination of the congestion showed that it was petechial in character and was not dissipated by finger pressure. Patient made no complaint of pain in his chest or back, and there was no evidence of any fracture of ribs, sternum, or spine. As far as could be ascertained there had been no bleeding from the ears or nose at the time of the accident, and subsequent examination of the eyes by the ophthalmoscope was negative as regards retinal hæmorrhages.

Alarming though the appearance of the patient was on admission, his subsequent progress was uneventful, and he made a satisfactory recovery, leaving the infirmary at his own request on 23rd February. The discolouration disappeared very quickly and seemed to fade away, there being none of the play of colours seen in an ordinary extravasation of blood into the tissues. There was a mere trace of a yellowish tinge observable over the neck, cheeks and chin on the eighth day after admission, and on the same date it was noted that the sub-lingual hæmatoma had almost entirely disappeared. The congestion of the forehead remained the longest, but it was observed that latterly it yielded to pressure which it did not do at first. Photograph Fig. 3, taken, as were all the others, by Dr. Arch. Young, shows the rapid subsidence of swelling and disappearance of the discolouration, but the great extent of the sub-conjunctival hæmorrhage and its persistence at that date can still be seen.

As already stated, the cause of this very striking discolouration of the face and neck in so-called "traumatic asphyxia" is admitted to be the forcible compression of the thorax accompanied by a cessation for some moments of the movements of respiration. It is this partial or complete suspension of breathing for a short period that has led some to employ the term "traumatic apnœa" to describe the condition. Although the clinical record of this discolouration occurring in living cases is a small one, not possibly exceeding half a dozen in number, attention has been drawn to its occurrence in persons squeezed to death in struggling crowds or mobs. In the Ibrox football disaster at Glasgow some years ago it was observed. On this occasion, it will be remembered, a stand filled with spectators collapsed, and the occupants were precipitated in an inextricable mass to the ground. I have only seen one other

Digitized by Google

case of this special discolouration known as "traumatic asphyxia." It was the case of a man whose body was entangled in a rope that was being wound up by a windlass. On his admission to the infirmary the lividity of his face and neck was even more marked than in the present case, and, to my surprise, he made in the end a good recovery.

The two points of main interest in these cases are (1) the nature of the discolouration, and (2) the sharp limitation of the lividity to the head and neck. As regards the former, the investigations of Cobb and Beach (*Annals of Surgery*, April 1904), who studied sections of skin taken from a living patient, seem to disprove the view of Perthes that the discolouration is due to minute extravasations of blood. They rather point to its being the result of stasis from mechanical over-distension, with or without paralysis from engorgement of or pressure on sympathetic nerves. This view is now very generally accepted, and has led to these cases being by some described under the name of "pressure stasis." At the same time, the fact should not be lost sight of that this case I am now reporting shows that extravasations of blood may occur. The sub-conjunctival hæmorrhages and the sub-lingual hæmatoma in my case are proof of this. As to the second point, the explanation put forward by Perthes that the sharp limitation of colour to the head and neck is due to the lack of valves in the jugular and facial veins is possibly the correct one.

Just recently I have received from Dr. Maitland Ramsay an interesting note about the case. He tells me that the patient's sight has become very much affected and that the opthalmoscope shows distinct signs of atrophy in both optic discs at their outer aspect, but especially in the right eye, with great contraction of the visual fields. Dr. Ramsay adds:—"I fear the loss of sight is progressive and that the patient will ultimately become blind." I cannot find that this sequela has been noted in any of the other recorded cases of "traumatic asphyxia."

Looking to the etiology and pathology of these cases it would almost seem that by the immediate employment of artificial respiration, combined with the inhalation of oxygen, some of these cases might be successfully resuscitated, were no time lost in applying these remedies. In conclusion, *it may not be* out of place just to mention that these cases have a special interest also from a medico-legal point of view.

Digitized by Google

A CLINICAL LECTURE ON VARIOUS SUBJECTS.[1]

By JONATHAN HUTCHINSON, F.R.S.

GENTLEMEN,—By the courteous invitation of Dr. Norman Walker I am permitted this morning to occupy his place. Believe me, I count it a high honour to give a lecture in the clinical class-room of the world-renowned Royal Infirmary of Edinburgh, and I will do my best to put my allotted hour to good use. It is desirable to explain at once that I am not a dermatologist, and that in many branches of this work I can make no pretence to supplement in any way your professor's teaching. From my early studentship diseases of the skin have appeared to me to offer a most attractive field for the study of pathological laws, and one which might be made contributory to the knowledge of general medicine. Through a long life I have accordingly been a zealous observer in this department, but by very far the larger portion of my time and thoughts has always been devoted to pursuits more strictly surgical. My lecture is to be a clinical one, and for the most part extempore. Dr. Norman Walker has kindly collected for me a most interesting series of patients, and I have just now had an inspection of them under his guidance. The first group of cases which I will take are some most instructive examples of ichthyosis in its various forms.

ICHTHYOTIC MALADIES IN RELATION TO CONGENITAL DEFECTS IN THE SKIN.

These are very important in reference to the general laws which they illustrate, for it may be asserted that a clear comprehension of this malady is fundamental to a knowledge of a large proportion of chronic diseases of the skin. When we use the term "ichthyotic" we mean that the disease so designated has its origin in congenital imperfection in the formation of the skin. Do not be misled by a name, and, above all, do not trust to etymological derivations. It is only a small minority of ichthyosis cases which in least resemble the scaly skin of a fish, and a great number of dermatitis cases which derive their peculiarities from inborn imperfection of structure would never suggest such a comparison. You will find in systematic works a long list of adjectives in use as additions to the name ichthyosis.

[1] Delivered in the Royal Infirmary, Edinburgh, on 5th February 1908.

Digitized by Google

Some, such as *nitidans*, *furfuracea*, *farinacea*, *epidermidis*, &c., suggest merely slight desquamation, whilst others, such as *spinosa* and *hystrix*, imply a fancied resemblance to the porcupine condition. You may take it that the conditions vary within very wide limits indeed, and that we must look to sameness in causation rather than to similarity in result as our clue to their mutual relationship. Keep in view the complex anatomy and physiological endowments of the skin, and recognise that any one of these, or several together, may be defective, and a little imagination may serve to construct the whole group of what we call ichthyotic maladies. The defect may be in the squamous layers of the epidermis, in the stratum lucidum, in the mucous layer, or in any of the papillary or gland structures of the corium, and the result will differ in each. If the coil-glands are defective the patient will be "a never-sweat," and will be liable to certain peculiarities in the forms which dermatitis may assume under various provocative influences. If the sebaceous glands are the structures involved the skin will want its due supply of oily matter, and dry epidermic accumulation may be the result; or, on the other hand, affections of the so-called seborrheic type may occur. Probably the number of those in whom the skin is not, in all respects, perfectly well endowed is very large indeed, and it becomes of the very first importance, in seeking to explain any peculiar form of skin-disease, to inquire carefully as to any peculiarities which may have been previously observed in the patient or his relatives. All such peculiarities are transmittable, and they are susceptible, in hereditary transference, of endless modification.

It may perhaps seem to some strange to suggest that any one layer of the epidermis, or any one system of organs, may be suppressed, either wholly or partially, whilst the rest remain sound. It may be admitted that in most instances several probably suffer together, but a little inquiry will easily discover marked examples of the almost exclusive implication of one alone. Let us remember what occurs in albinism. We do not say that an albino is the subject of ichthyosis, but essentially his condition belongs to the same class. The layers of pigment cells in the rete are defective in development and in function. It is quite fair to employ what is so conspicuous in the albino to illustrate what is possible, but often not visibly present, in various other con-

Digitized by Google

ditions, some of which we call ichthyosis. There are various degrees of albinism, and some of them are associated with other defects of the skin. The common field mole (Talpa europœa) is very liable to produce albinos. They are of a light yellow tint, not quite white. Now I once obtained a mole—it is now in the College of Surgeons' Museum—which was not an albino only, but was almost absolutely hairless. It had its white hairless skin thickened and thrown into wrinkles. It was well grown, and appeared to be otherwise quite healthy. You will know that there is a breed (Chinese) of hairless dogs; and some very remarkable examples of hairlessness have been observed in the human subject. In one such, which I have myself published, in which the entire glandular systems of the skin had suffered, the skin was dry and very thin, and no trace of the orifices of sebaceous glands could be found. Even the mammary glands and their nipples were absent. I hope that I have made it clear that my motive, in adducing these examples of extensive suppression of structures, is to prove the possibility of that which in minor degrees is, I suggest, very common.

It is next desirable to advert to a few general facts as regards the affections which we class as ichthyotic.

Although these peculiarities of structure or suppressions must be supposed to be always congenital, their manifestations are often, indeed usually, more or less delayed. They may begin during intra-uterine life, and in extreme examples produce what is known as the harlequin fœtus, or when in less severity may cause the skin to be very obviously affected at the time of birth. Both these conditions are usually incompatible with infantile life, and concerning the great majority of our ichthyotics it is true that nothing was observed at the time of birth. It was only under the influence of exposure to air and to the irritation of clothing that the fact became apparent that the child's skin was not well organised. How long may these manifestations be delayed? It seems probable that the delayal may be quite indefinitely prolonged, and that the evidence of a defect which was born with the infant may not be disclosed until adult age or even senility is reached. The skin may wear well for long, but may finally give way in a fashion which makes it clear that it never was perfect in structure. In this fact we have, I think, an explanation of many morbid developments otherwise quite inexplicable. Thus we must not assume respecting any disease that because it has not shown itself

Digitized by Google

till adult or middle life that it does not depend upon inborn and congenital peculiarities.

I have already hinted that probably many of the chronic disorders of the skin which have offered great difficulties as to causation are really to be referred to structural peculiarities such as we have been considering. Let us take common psoriasis. This well-known condition occurs in persons in good health. It is certainly transmitted from parent to child; and various conditions as to season and state of health influence it; and, for example, it has been observed that it is usually worse in women during lactation. If you will ask your patients who suffer from it, I believe you will very commonly find that they are those who had what they considered remarkably good skins, but if pressed they will admit that they did not perspire easily. Those who sweat freely very rarely get psoriasis, and those who have greasy skins never. A tendency to produce epidermic scales which are insufficiently oiled and tend to dry and adhere is a main part of the process, though by no means the whole. When psoriasis appears to be inherited it is not the disease which is transmitted, but the skin. There is no such "entity" as "psoriasis" which can be superimposed upon a person. Each one must develop it for himself. It has its roots in his individual peculiarities. When a woman liable to psoriasis suffers from it almost exclusively during lactation, the explanation is possibly not difficult. The sebaceous glands are in her always below normal activity and only just sufficient for the needs of the skin. When, however, the mammary glands suddenly come into activity the balance is upset. They are overgrown sebaceous glands, and they successfully claim for the baby the elaborated fatty matters which would otherwise have been distributed over the whole skin.

We may note with interest that in one of the patients before us—the subject of ichthyosis—the elbows and the knees are affected with especial severity. Now these are the well-known seats of election of common psoriasis. In many cases of ichthyosis I believe you will find on inquiry that some predecessor has been the subject of psoriasis. I suggest that the two are allied and may undergo transmutation in transmission.

We have seen in the cases brought before us that in some forms of ichthyosis the palms and soles (which in others may be quite exempt) suffer severely. Now in adult life we often

Digitized by Google

encounter very troublesome forms of chronic dermatitis of these parts. The names *psoriasis palmaris*, *eczema palmaris*, are often applied to them, and in their most aggravated forms such terms as *tylosis* are in use. Not infrequently the influence of the patient's vocation—use of tools, excessive standing, &c.—seems to have been efficient as a localising cause. In all these cases we shall, I think, do well to recognise as fundamental an inborn imperfection of structure. They are probably examples of weak ichthyotic liabilities which have waited until some local influence has brought their hitherto concealed existence into manifestation.

To the same category we must assign the tendencies which produce corns, callosities and warts. In fact the theory now propounded underlies all individualism in disease and all that we are accustomed to call idiosyncrasy. All such peculiarities are no doubt structural in their causation. Witness the great variety of manifestations which result from the introduction of the specific parasite of syphilis. It is not that the poison varies in its endowments, but that it exerts its power upon tissues which are variously endowed. Thus one man gets a scaly eruption, another one of papular or pustular type, and a third one of bullæ. Let us establish it as a fundamental fact that all idiosyncrasy, whether it appear as a functional peculiarity or as a special type of local disease, is based upon peculiarity of structure. It is upon this that the well-known facts as to inheritance of these peculiarities are based. To their elucidation the recent recognition of the bearings of Mendel's law will afford us in the future invaluable help.

It may perhaps be thought that in the somewhat speculative opinions which I have put before you I have been resting too confidently on recondite biological laws. We will now, at your professor's behest, make an abrupt change of subject and call our minds back to what many will regard as more practical topics.

Prurigo Urticans and Urticaria Pigmentosa as Stigmatosis Insectorum.

The two children now before you are examples of skin symptoms due to outside causes; one is a case of *prurigo urticans*, and the other of *urticaria pigmentosa*. Again I have to beg of you to regard these names as mere names, and as used simply for convenience amongst ourselves. They mean little or nothing. There are two kinds of diagnosis: the one "nominal,"

Digitized by Google

which assigns a name; the other "essential," which seeks to assign the cause or essential nature of the condition named. As far as possible we must seek the second and refuse to be content with the first.

> Those earthly godfathers of heaven's lights,
> Who gave a name to every fixed star,
> Had no more pleasure in their shining nights
> Than those who walk and know not what they are.

And so it may chance to be in dermatology that those who are skilled in the employment of names are but too often by no means equally gifted with insight as to causes, or even with zeal to search for them.

Now in the two patients who are undressed before you there is no difficulty whatever as to "name-diagnosis." Not the youngest dermatologist would hesitate for a moment to exclaim "*prurigo urticans*," and "*urticaria pigmentosa*," nor could the oldest by any exertion of perverse ingenuity cavil at his decision. The diagnosis is written on the patients, back and front. I will speak of only one of them. The student who has seen this one ought never to the end of his days to forget what *urticaria pigmentosa* looks like. When, however, we ask as to "essential diagnosis," and inquire what is known as to the real nature of urticaria pigmentosa, we get but a feeble response. It is a form of persisting urticaria in which pigment accumulations take place, but why or wherefore no one knows. The histologists kindly come to our help and tell us that the mast cells are the structures chiefly concerned. According to their observations, we may regard the malady as a sort of insurrection against law and order on the part of these mast cells. The brown spots which you see scattered over the boy's body may be taken as so many mast-cell lunatic colonies, in which, without rhyme or reason, proliferation has become the order of the day. I invite you to think more kindly of these unfortunate cells, and to believe that they must have experienced in the first instance much provocation. The practical suggestion which I make as to the nature of that provocation is that it was the bite, or rather the puncture, of some blood-sucking insect, and that in almost all instances the insect to be incriminated is the common bed bug (*Cimex lect.*). This suggestion does not simplify the question nearly so much as it may at first sight be supposed to do. In fact, there are few problems, in reference

Digitized by Google

to the nature of disease, which are susceptible of simplification to that extent. All diseases result from complex causation, and unless we recognise this complexity we shall certainly get wrong. In this instance, although the puncture of the cimex is essential, it is not the sole cause of what follows. Not one in ten thousand of those who are bug-bitten develop *urticaria pigmentosa*. There must be present also idiosyncrasy of tissue, and the laws which we have just been discussing in reference to ichthyosis must be called to our aid. The poisoned puncture of the cimex is a detector of idiosyncrasy, and causes disclosure of the fact that its victim had personal peculiarities in reference to his mast cells and his pigment formation.

It is not improbable that an inherited tendency to xanthoma is the predisposing influence upon which the production of persistent and pigmented patches around the stigmata of bug-bites depends. The final result in some of its features much resembles a xanthoma patch. The tendency to xanthoma is rare, and the production of pigmented urticaria is likewise rare.

You will find great difficulty in obtaining information as to the appearances of recent bug-bites. They are not figured *sub nomine* in any atlas. Not one person in a thousand has ever seen them. To inquire about them of those likely to have suffered will usually be resented as an insult. Even amongst members of our own profession I have encountered the greatest reluctance to admit the possession of any knowledge, and an evident desire to avoid the subject as not only repulsive but mean and vulgar. As practitioners in medicine, we cannot, however, afford to taboo the topic in this off-hand fashion. I will tell you what little I know respecting bug-bites. They are very different from those of fleas. Very often they are not urticarious wheals, and they may cause no irritation whatever, and as a sequence they are not aggravated by scratching. The sufferer may present himself at the breakfast-table quite unconscious that his face, upon which are several œdematous ill-defined blotches, has been in any way damaged. His friends call his attention to what he had himself not noticed. He may then admit a certain sensation of heat and tingling, but nothing that excites to scratching. Not being scratched, the patches are very transitory, and in two or three days all traces of them may have vanished. I speak in great ignorance, my opportunities for observation having been but very few, and

Digitized by Google

having never met with anyone who could or would help me. Fleas do not, as a rule, attack the face; but the face, and, above all, a bald scalp, are favourite feeding-grounds for the cimex. The first result is a large, ill-margined, œdematous patch of a dusky-red colour from congestion. But seldom can any puncture be made out by the unassisted eye. Their habits are nocturnal, and they are rarely seen by daylight. They have their own preferences, and will attack only those who are attractive. The irritation which they cause is rarely sufficient to wake their victim from his sleep, but may yet cause restlessness. Although their bites are rarely followed by ecchymosis, they certainly bleed at the time, in some cases, as the patient's linen may give proof of.

The following are some of the principal reasons which lead me to believe that urticaria pigmentosa represents the stigmata of the cimex:—

It is met with almost solely amongst the poor and amongst residents in cities. Our dermatological specialists never earn a fee by prescribing for it, and in country populations it is almost unknown. It may begin very early in life, so early, indeed, that it has been asserted to be sometimes congenital. The evidence on this point depends, however, upon the doubtful testimony of nurses, and we know that very young infants are often attacked by these pests.

The history is always of small and quite local outbreaks at first and of fresh crops at intervals afterwards. The fresh groups are never symmetrically bilateral, and are always arranged in the constellation pattern. Whilst many of the spots fade away others persist and undergo changes as to deepening of colour, &c., in relation to the complexion of the patient. At the age at which the skin usually ceases to much resent insect irritation, or perhaps becomes less attractive to insects, the production of groups of new spots seems to cease. At any age, if the victim be removed from home and put into a clean hospital bed, the production of "initial lesions" will cease, whilst the old stains will persist. The final result, when the skin is covered over with spots, such as we recognise in "*urticaria pigmentosa*," is a very rare affection, and you will not often—perhaps never—have opportunities for making its diagnosis. The arguments which I have used, however, in reference to it apply to certain eruptions which are common, and concerning which it is most important that you should be well informed.

Digitized by Google

We have just seen several good examples of "*prurigo urticans.*" Different names are given by dermatologists to this eruption, but the cases usually present features which indicate their relationship. Two features are usually indicated in the names given—one is that the eruptions are very irritable, and another that they are often ecchymotic. The suggestion which I wish to put before you is that the eruptions known under the names of lichen urticatus, prurigo urticans, infantile prurigo, purpura urticans, urticaria petechialis, roseola infantilis, &c., are one and all caused by the pricks of insects. Fleas and pediculi are those most commonly to be suspected, but gnats, flies, the harvest mite and some others are sometimes the culprits. I was present at a meeting of the Pathological Society of London some fifty years ago, when one of the members, an enthusiastic and courageous man, brought before us a common body louse. He did so, he said, because he did not think that many of us knew what they were like; and my impression, from his enthusiasm, was that it was recently acquired knowledge even to him. Now there was in my youth an eruption which we diagnosed as "prurigo senilis," and considered to be incident to old age, and as to the cause of which nothing was known. It made miserable the latter years of many old persons in all classes. All sorts of drugs used to be prescribed for the relief of the intolerable itching, and various plans of diet were laid down. Then came the new knowledge that it was the clothes, and not the man, which needed treatment—that the prurigo was due to lice. We now never diagnose "prurigo senilis," its subjects are easily cured and the very name is almost forgotten. I am convinced that "prurigo infantum" and the other maladies of which I have just given you the names must share the same fate. You will suggest that this is too sweeping a reform, and if the suggested relationship were true it must have been noticed before. We must remember, however, that it is often the apparently obvious that is most easily overlooked. To borrow the remark of a witty Frenchman, "Mais il faut que cette vérité soit bien simple pour avoir échappé à tous les philosophes."

That I may not become too diffuse, for the subject is a large one and I could say much about it, I will restrict myself to fleas and leave you to apply the hints which I give about them to the rest.

Flea-bites differ very much from those of the cimex, which we

Digitized by Google

have been discussing as the cause of urticaria pigmentosa. They are attended by intense irritation, and are consequently always much scratched. Fleas may be encountered almost anywhere. The rich, well-cared for and cleanly are not exempt. They have remarkable preferences for individuals, and will attack one child in a family and spare all the others. They often hunt in couples or in cohorts, and may cause not only a few spots, but may produce an extensive eruption. When this is the case they may cause a febrile illness. I know children in whom temperatures of 103 or more; attended by sickness, may occur from flea-bites. The little petechial spots which are so often seen on the skins of poor and neglected children are far from being typical flea-bites. They are the late results of the little ecchymoses which attend them. In their early stages they are large erythematous wheals, or even bullæ.

We have at present in the Polyclinic Museum, a special exhibition of skin diseases caused by insects, and amongst them is one in which large bullæ were present. I cannot, however, do better than refer to a Fasciculus of the New Sydenham Society's Atlas[1] for illustrations of what fleas can do. I hold that they are enemies to the happiness of childhood by no means to be despised. You will find in the same volume much detail which I have written on the subject, but which I must not now repeat. We have seen in our patient, and may see represented in our atlases a condition which may be compared to the store of a miser. It was not gained suddenly, but has been added to by small increments from time to time, which have been carefully hoarded until, taken together, they represent a good round sum. I submit that the facts which I have stated as to urticaria pigmentosa do not fit with any other hypothesis than that it is the result of recurring insect traumatism, and I do so with considerable confidence in your verdict.

I may just add that the successive attacks which contribute to the final result always occur during the night, and that it is not unusual for periods of immunity of some months or years to occur, more especially if the patient changes his place of residence.

The Present State of the Leprosy Question.

We pass now to a totally different topic, and although it is one to which I had proposed to devote a large part of my address, I

[1] Fasciculus XVI., New Series, Plates 156 and 157 are of especial interest.

Digitized by Google

must be very brief, for I am warned that but a few minutes of my allotted hour remain. Some ten years ago I made Leprosy, and the hypothesis that the eating of badly-cured fish is its cause, the subject of an address which I had the honour to give before your Royal Medical Society. It might be appropriate therefore that I should on the present occasion revert to the topic and endeavour to show what progress has been made. Since then I have visited the principal leprosy fields in South Africa and in India, and I have printed a book. It is to be confessed, however, that my success has been but partial. Whether the disappointment has resulted from my own indexterity in presenting the argument, or from the circumstance that the huge mass of circumstantial evidence upon which the hypothesis rests requires for its mastery more leisure and more painstaking attention than most members of our profession are willing or even able to devote to it, I cannot say. I am thankful to be able to report that my disappointment has been far from complete. A strong suspicion as to risks of using badly-cured fish has become widespread and is at the present exerting, it cannot be doubted, a satisfactory influence on social habits. At the same time many who have not accepted an exclusive fish hypothesis have come to distrust the theory of contagion and to believe that in some way the disease must be connected with food. This is most important. For myself, I hold still the definite belief that leprosy is initiated in some way by the influence of badly-cured fish taken as food, and that it is perpetuated not by external contagion, but by contaminated food (mother's milk, &c.).

It is a remarkable fact that of those who during the last half-century have assailed the fish-hypothesis—and they have been many—none have adduced any facts which confute it, whilst in many instances they have unwittingly given it support. It is a further fact that no one has advanced any rival explanation having the least plausibility. The facts as regards the disease in Eastern China have been quoted over and over again, and I have challenged their explanation on any other hypothesis than that comparative absence of fish and abundance of salt prevent leprosy, whilst reverse conditions favour its prevalence. To this challenge, so far as I know, no one has attempted any answer. The facts to which I refer are briefly as follows:—In the north of Eastern China, the Pekin and Tientsin region, there are sandy plains, abundance of salt, little water, and fish is a luxury. There leprosy

Digitized by Google

is unknown. In Southern China, the Canton district, the waters abound in fish, and salt is an imported and taxed article. There leprosy is very common. The race is the same, and their social habits, with the exception of fish eating, the same, yet from century to century this startling discrepancy prevails. It proves, I think, two points: first, that the disease is not communicable by external contagion; and, secondly, that it must be in some way caused by food.

It has been asserted repeatedly of various and very dissimilar districts that there are places where fish is not eaten and yet leprosy prevails. I have made it my duty to visit several such, and in every instance the allegation has broken down, and in some instances in a most remarkable manner. My most recent tour of inquiry was to the valley of the Rhone, where leprosy, after several centuries of immunity, has again shown itself. I was assured on all hands that the Swiss peasants eat no salt fish, and they could not get it. When I got to the place I found that there was a large sale of "stock fish" during the Catholic fasts, and that during Lent it constituted, with potatoes, the principal diet. The number of lepers was very small, and thus in due proportion with the exposure to risk which had occurred. In none of the Protestant cantons of Switzerland is there a single leper. All the fish is imported from great distances, and it can be kept good only in winter. Thus the risks of its decomposition are great. In Norway objection was raised that in Finmarken there is but little leprosy whilst there is plenty of fish. The reply is ready; Finmarken is in the Arctic circle, and during the greater part of the year the fish is frozen and cannot decompose—conditions in strong contrast with those which prevail on the west coast, where the malady is common. I could instance a great many facts which have recently come to light, and all of which tend to the same conclusion. I must, however, bring my lecture to a close, and will only ask your attention to one very important fact about which there exists much misapprehension. It is often stated, and believed by many, that leprosy is declining in Norway owing to segregation. The fact is that there is no efficient segregation in Norway, and that most of the lepers are at their own homes. The disease is declining there just as it formerly did in England and the Shetlands and numberless other places under the influence of increasing wealth and advancing civilisation. Now in South

Digitized by Google

Africa, on the contrary, isolation measures are most strictly carried out, and until quite recently all lepers were under confinement so far as was practicable. They are not so now, simply because the number has gone on increasing so fast that there is not sufficient accommodation for them. Yet instead of regulating their fish factories and placing their salted fish under the supervision which it urgently needs, the Government is proposing to build new leper houses. I do not wish to be rude, but it seems to me to be a case of the Wise Men of Gotham and the Cuckoo. At any rate it is surely time that we should seriously ponder the two facts that the disease is quietly dying out in Norway, where segregation is merely nominal, and terribly increasing in South Africa, where it has been rigorously enforced.

ANALYSIS OF SEVENTY-SIX CASES OF POLIOMYELITIS ANTERIOR ACUTA.

By BYROM BRAMWELL, M.D., F.R.C.P.,
Physician to the Royal Infirmary, Edinburgh.

IN this communication I have analysed 76 cases of poliomyelitis anterior acuta met with in hospital and private practice.

Sex.—33, or 43·4 per cent., of the cases were males, and 43, or 56·5 per cent., of the cases were females.

Age at Onset.—The age at which the disease developed was ascertained in 73 of the 76 cases, and is shown in Table I.

TABLE I.—*Age at Onset in 73 Cases of Poliomyelitis Anterior Acuta.*

Age at Onset.	No. of Cases.
During 1st year	16
At ? birth	1 case.
3 months	3 cases.
4 "	1 case.
6 "	1 "
7 "	1 "
9 "	3 cases.
10 "	4 "
11 "	2 "

Digitized by Google

Age at Onset.			No. of Cases.
During 2nd year			8
At 13 months	2 cases.		
14 "	1 case.		
15 "	1 "		
18 "	3 cases.		
21 "	1 case.		
During 3rd year			17
At 25 months	7 cases.		
29 "	1 case.		
31 "	8 cases.		
33 "	1 case.		
During 4th year			7
" 5th "			6
" 6th "			5
" 7th "			1
" 8th "			3
" 10th "			1
" 13th "			2
" 14th "			2
" 16th "			1
" 18th "			1
" 20th "			1
" 24th "			1
" 35th "			1
			73
Not stated			3
	Total		76

From this table it will be seen that in the 73 cases in which the age at onset of the disease is known, 16 cases, or 21·9 per cent., occurred during the 1st year; 8 cases, or 10·9 per cent., during the 2nd year; 17 cases, or 23·2 per cent., during the 3rd year; 9 cases, or 12·3 per cent., during the following 8 years—7th, 8th, 9th, 10th, 11th, 12th, 13th and 14th years; and 7 cases, or 9·5 per cent., after the 14th year.

Of the 73 cases, 41 cases, or 56·1 per cent., occurred during the first 3 years; and 59 cases, or 80·8 per cent., occurred during the first 6 years of life.

One case was said to date from birth; 3 cases occurred at the 3rd month; one case developed when the patient was 35 years of age.

Digitized by Google

Time after the Onset of the Disease at which the Patients were seen.—This is given in Table II.

TABLE II.—*Time after Onset, when seen.*

Less than 3 months	13 Cases
From 3 to 12 months	25 "
" 1 " 5 years	16 "
" 5 " 10 "	4 "
" 10 " 15 "	5 "
" 15 " 20 "	2 "
" 20 " 25 "	4 "
" 25 " 35 "	2 "
" 35 " 45 "	2 "
Not stated	3 "
Total	76

Etiology (*Supposed Cause*).—In 51 of the 76 cases the disease developed without, so far as could be ascertained, any apparent cause. Most of the patients had previously been in good or robust health. Several of the cases developed during unusually hot weather. In one case the father of the patient had an attack of poliomyelitis anterior acuta at the same age (2 years) at which the patient was affected. This, no doubt, was a mere coincidence.

In the remaining 25 cases the different conditions set forth in Table III. were supposed to have been, or were stated by the parents to have been, the cause of the condition.

TABLE III.—*Alleged or Supposed Cause in* 76 *Cases of Poliomyelitis Anterior Acuta.*

Chill, catching cold, &c.	6 Cases
Teething	7 "
Teething and fright	1 case
Influenza	1 "
Fracture of radius	1 "
Fall	1 "
Long walk	1 "
Measles	2 cases
Sore throat	1 case
Pneumonia	1 "
Bronchitis	1 "

Digitized by Google

Whooping-cough	1 Case
Whooping-cough and bronchitis	1 "
No apparent cause	51 cases
Total	76

Initial Symptoms.—In 29 cases the history was imperfect or the patient was ignorant of the occurrence or nature of the initial symptoms.

In the remaining 47 cases fever was present in 46 cases, vomiting was said to be present in 13, headache in 10, convulsions in 6, coma in 2, and retraction of the head in 2 cases. In 8 cases the bladder was affected (paralysed) during the initial period of the disease. In 1 case numbness in the legs was complained of; and in 1 case the eyes were said to be bloodshot.

These figures probably give a very imperfect idea of the exact nature of the initial symptoms which were actually present.

Initial Pain.—In 14 of the 76 cases pain was stated to have been present during the initial period; in the remaining 62 cases pain was absent or not noted; in many of the cases the patient was unable to give any account of the mode of onset. The parts to which the pain was referred are shown in Table IV.

TABLE IV.—*Parts in which the Initial Pain was felt.*

Pain all over	3 Cases
" in back of neck	1 case
" in back of neck and back	1 "
" in back of neck and legs	1 "
" between shoulders	1 "
" in neck and arm	1 "
" in legs	4 cases
" in knee	1 case
" legs and arms	1 "
Not stated	62 cases
Total	76

Pain Persisting after the Initial Symptoms had passed off.—In 5 cases pain was said to have continued for some time after the initial symptoms had passed off; in the remaining 71 cases no

Digitized by Google

statement is made in the notes as to the occurrence of pain after the initial symptoms passed off. The parts to which pain was referred are shown in Table V.

TABLE V.—*Parts in which the Persisting Pain was felt.*

Pain in arms and legs . . .	1 Case
" legs	1 "
" arms	1 "
" and tenderness in calves . .	2 cases
Not noted	71 "
Total . .	76

The following are brief notes of some of the cases in which pain, either at the onset or lasting for some time after the initial symptoms had passed off, was a prominent symptom:—

CASE I.—J. S., aged 17, female, admitted to the Edinburgh Royal Infirmary on 20th October 1894, suffering from inability to walk, due to loss of power and atrophy of the muscles below the knee.

History.—A strong, healthy child till seven years of age, then febrile attack, with severe headache, vomiting and partial unconsciousness. *During the initial fever pain down the back and in shoulders, elbows, knees and ankles; the pain lasted for six weeks.* During this time the legs were, it is said, kept flexed. When the pain passed off the patient was unable to stand because of complete loss of power in the legs below the knees.

Condition when Seen.—Both legs below the knee completely paralysed; muscles markedly wasted; feet small, blue and very cold—felt like pieces of ice.

CASE II.—M. M., aged 14, female, admitted to Edinburgh Royal Infirmary on 2nd October 1899, suffering from loss of power in arms and legs.

History.—Eight months ago chorea. Seven months ago influenza, *followed by hot burning pains in the legs, thought to be rheumatic;* loss of power and rapid atrophy in the muscles of the legs. *In bed four weeks. During this time continued to suffer from pains in the legs.* On getting up unable to walk. Arms also affected.

Condition when Seen.—Complete paralysis below the knees, with great wasting of muscles, abolition of reflexes and electrical excitability, both faradic and galvanic; some loss of power and wasting in the arms. Under treatment arms improved; no improvement in legs.

Digitized by Google

CASE III.—A. S., aged 5, female, seen on 18th December 1894, suffering from paralysis and atrophy of right leg and thigh.

History.—Six weeks ago sore throat and fever. *On fourth day of illness complained of pain in the right knee and hip. This lasted for six weeks, and was thought to be due to disease of the hip joint.* After the pain passed off it was found that the patient was unable to move the leg, which was markedly atrophied and presented all the typical characters of a poliomyelitis anterior acuta.

CASE IV.—C. M., aged 6, female, seen on 14th August 1895, suffering from paralysis and atrophy of the right leg.

History.—Nine months ago had a feverish attack, *during which she complained of pain in the right leg, which was thought to be rheumatic.* When the pain passed off it was found that the leg was paralysed.

CASE V.—N. D., aged 2, male, seen on 11th January 1896, suffering from paralysis and atrophy of both legs.

History.—Six months ago had an attack of pneumonia, which lasted four or five days. When it passed off it was found that the legs were paralysed. *During the acute stage of the illness patient complained of great pain in the legs when they were touched or moved.*

CASE VI.—G. S., aged 6, female, seen on 19th October 1897, suffering from paralysis and atrophy of the left leg.

History.—Three months ago had a feverish attack, followed by loss of power in the legs. *During this illness complained of pain at the back of the knee on movement.*

CASE VII.—M. B. C., aged 3, female, seen on 16th January 1904, suffering from paralysis and atrophy of both legs.

History.—Six months ago febrile attack, followed by paralysis and atrophy of the legs. *For four weeks after the onset complained of severe pains in the legs. For three months used to call out, whenever her feet or legs were touched or moved, "Oh, my feet!"*

CASE VIII.—B. W., aged $4\frac{1}{12}$, female, seen on 9th May 1904, suffering from paralysis and atrophy of the left leg.

History.—The disease commenced suddenly eight months ago. *For two or three days after the onset complained of pain in the left knee, thought to be rheumatic.*

Persisting Bladder Paralysis.—In one case the paralysis of the bladder lasted for several weeks; in another case both the

Digitized by Google

bladder and rectum remained paralysed for five months after the initial symptoms had passed off.

Period of the Disease at which the Paralysis Developed.—In 38 of the 76 cases the period of the disease at which the paralysis developed was more or less accurately ascertained, and is set forth in Table VI.

In one case the paralysis was the first symptom. In that case it developed suddenly, and was not followed by fever. The patient, aged 2 years, who had not previously manifested any symptoms of illness, was told by her mother to take up a spoon. It was found that she could not do so; the arm remained paralysed afterwards. When seen at the age of 12 years the muscles of the left upper arm and shoulder girdle were completely paralysed and extremely wasted, the muscles of the forearm considerably wasted, the muscles of the hand unaffected. The patient was a strong, robust, healthy girl in all other respects. In this case the sudden onset without previous symptoms seemed to indicate a hæmorrhage in the anterior horn of grey matter.

TABLE VI.—*The Period of the Disease at which the Paralysis was first Noticed.*

Sudden (the first and only symptom) .	1 Case
1st day of illness	9 cases
2nd " "	8 "
3rd " "	3 "
4th " "	3 "
5th " "	2 "
6th " "	1 case
1 week after febrile onset . .	3 cases
2 weeks " . . .	1 case
4 " " . . .	1 "
6 " " . . .	1 "
Some days " . . .	5 cases
Not stated	38 "
Total . .	76

Note.—The date at which the paralysis was first noticed does not of course imply that it had developed at that date; in the case, for example, in which the paralysis was not noticed until six weeks after the febrile onset (Case I. page 505), it had in all probability developed during the early stages of the case.

Digitized by Google

The Distribution of the Initial Paralysis.—In the 76 cases, one or both lower extremities were affected, either alone or in conjunction with other parts, in 64 cases (alone in 47 cases, and with other parts in 17 cases); in the 47 cases in which one or both lower extremities were alone affected, both legs were affected in 18, and one leg in 29 cases (right 12, left 17 cases). In 33 cases in which one leg only was affected, either alone or with one upper extremity, the right leg was affected in 15 and the left in 18 cases.

In the 76 cases the arms were affected, either alone or in conjunction with other parts, in 29 cases (alone in 12 cases, with one or both legs in 17 cases). In 12 cases the arm alone was affected (in one of these cases the right arm and left sternomastoid and trapezius were affected); in these 12 cases the right arm was affected in 7 and the left in 5 cases.

In 4 cases one arm and one leg were affected—the arm and leg on the same (right) side in 3 cases, and the arm and leg on the opposite side (right arm and left leg) in 1 case.

The distribution of the initial paralysis is shown in Table VII.

TABLE VII.—*The Distribution of the Initial Paralysis in 76 Cases of Poliomyelitis Anterior Acuta.*

Both legs	18 Cases
Right leg	12 "
Left leg	17 "
Right arm	6 "
Left arm	5 "
All four limbs	6 "
All four limbs and trunk	4 "
Right arm and right leg	3 "
Right arm and left leg	1 case
Right arm and left sternomastoid and trapezius	1 "
Both legs and right arm	1 "
Both legs and left arm	2 cases
Total	76

Residual Paralysis.—In the 76 cases, in 1 case there was no residual paralysis (complete cure), and in 1 case the nature and distribution of the residual paralysis is not known.

Digitized by Google

In the 74 cases in which the nature of the residual paralysis is known, one or both lower extremities were affected alone or in conjunction with other parts in 59 cases (both in 20 cases, one in 39 cases); in the 39 cases in which one leg only was affected the right was affected in 16 and the left in 23 cases.

In the 74 cases in which the distribution of the residual paralysis is known, the arm was affected, either alone or with one or both legs, in 23 cases (alone in 15 cases, with one or both legs in 8 cases); in the 15 cases in which the arm alone was affected the right arm was affected in 9 and the left in 6 cases; in 1 of the cases in which the right arm was affected the left sternomastoid and trapezius were also involved.

The distribution of the residual paralysis is shown in Table VIII.

TABLE VIII.—*The Distribution of the Residual Paralysis in 76 Cases of Poliomyelitis Anterior Acuta.*

Both legs	13 Cases
Right leg	16 "
Left leg	22 "
Right arm	8 "
Left arm	6 "
All four limbs	4 "
All four limbs and trunk	1 case
Right arm and left leg	1 "
Right arm and left sternomastoid and trapezius	1 "
Both legs and right arm	1 "
Both legs and left arm	1 "
None	1 "
Not known	1 "
Total	76

THE PSYCHOSES OF INFLUENZA.

By R. DODS BROWN, M.D., M.R.C.P.,
Assistant Physician, Royal Edinburgh Asylum.

ALTHOUGH influenza gives rise to no special form of psychosis, it is probably the most important febrile affection in the causation

Digitized by Google

of mental disorder. During 1889-90, when the whole of Europe was visited by a pandemic of influenza, it was observed and pointed out that the symptoms of depression of mind and loss of volition seemed to be on the increase and were directly traceable to influenza. Dr. Clouston, in 1890, said: "The microbe or the poison of influenza destroyed the cortical energy to a much larger extent than any of the continued fevers or zymotics, nay, its effects on the mental condition of Europe, during the years of its prevalence, far exceeded in destructive powers all those diseases put together. It left the mental and nervous tone of Europe lower by some degrees than it found it."

That cases of mental disease are increased by influenza cannot very well be disputed. It is recognised that very frequently a certain amount of lassitude, neurasthenia or mental depression is present after an attack of influenza, even although this has been of a mild character and of short duration.

It has been suggested that it is the post-influenzal exhaustion that is the important factor, but, although this may be true in some cases, it is not so in all, because the mental symptoms appear very often as soon as the second or third day of the disease. In most cases, however, the psychosis begins to show itself at the end of the febrile attack, though it may not be observed until several weeks later. It is impossible to connect any particular variety of influenza with the onset of insanity which may appear even in cases where the rise of temperature and increased heart's action are of short duration, and also in those of a mild character.

The influenza bacillus or toxin seems to be the exciting agent rather than the fever or the post-febrile exhaustion.

I have been unable to find any reference to the presence of Pfeiffer's bacillus in the cerebro-spinal fluid of patients exhibiting the usual forms of post-influenzal psychosis, except in those cases complicated by an inflammatory condition of the meninges. From three of my cases of mania in the acute stage, I drew off some cerebro-spinal fluid, and after centrifuging this I endeavoured to grow the organism from it on blood agar, but without success. I also injected 1 c.c. of the cerebro-spinal fluid of two of these patients into four mice, but without producing any apparent effect.

Almost any kind of mental affection may be associated with the disease under consideration, but melancholia is what is most

Digitized by Google

commonly seen, and there is very often a pronounced suicidal tendency accompanying the depression.

Rorie has recorded that of sixty-eight cases of mental disorder due to influenza, forty-six were melancholic, and of these, thirty were suicidal. Acute and simple mania came next with twenty cases, of which six were suicidal.

Soutar found that only one case in ten was maniacal, while other authorities say that melancholia is twice as frequent as all other forms of insanity.

During the period extending from January 1906 to the end of February 1908 twenty cases of insanity directly traceable to influenza were received into the Royal Edinburgh Asylum. Contrary to what is usually found, melancholia was not in excess of the other types of mental disease, there being ten cases of melancholia and ten of mania. Of the patients suffering from depression, seven were suicidal and one was markedly stuporose. Five cases exhibited very extreme agitation, restlessness and resistiveness, and laboured under many distressing delusions of a persecutory character. Of the ten patients suffering from the manic form of insanity, nine were classified as acute mania, and in these there was complete or almost complete dissolution of mind, a constant incoherent chatter, with singing and shouting, while in seven there was great motor restlessness or violence. All of these laboured under hallucinations of sight and hearing. In the tenth case in the manic group the mental confusion was slight. She was talkative, irritable and restless, but the most outstanding symptom in this case was the delusions.

The maniacal type of mental disorder associated with influenza is more commonly seen in women and young people, and this comes on, as a rule, earlier than melancholia, which is present most frequently in men and elderly people. Of fifteen cases occurring in women in my series, nine were of the manic form of disease, while only six were melancholic, and of the five men affected, four were melancholic and one was acutely maniacal. The ages of the females ranged from twenty-six to sixty-eight years, and gave an average of forty-three, while those of the males ranged from twenty-one to sixty years, their average being fifty-eight. In all the cases suffering from acute or delusional mania, with one exception, the symptoms set in within two weeks of the onset of influenza, four, indeed, beginning within five days of the commence-

Digitized by Google

ment of the febrile attack. In the majority of the patients in the melancholic group evidence of mental disorder did not show itself in a pronounced manner until two or three months after the influenza, although in two cases it was said that the patients had never been quite well since the illness.

Some cases of general paralysis are stated to have originated as a result of influenza. It is quite probable that the vitality of the patients may be lowered as a result of the fever, and the toxin of general paralysis is able to overcome the resisting power of the individual. Elkins has drawn attention to cases closely simulating general paralysis which came on after influenza, and which in time recovered.

It is recorded that epilepsy has been brought on by influenza.

Gowers says that the worst forms of derangement after influenza occur in those who are predisposed by inheritance or by previous mental disturbance. It seems as if the gravity and duration of the illness are increased by nervous instability. I have been able to get a definite history of predisposition, either by heredity or a previous attack of insanity, in sixty per cent. of my patients. These include five cases of melancholia, four of whom were suicidal, six cases of acute mania and one case of delusional mania. Nine of the twelve cases with a predisposition occurred in women. All of these patients without exception were acutely ill. It is interesting to note that one woman suffering from acute mania passed through a similar illness as a result of influenza fourteen years ago.

A marked feature of post-influenzal psychosis is the liability to relapse. This occurred in three melancholics and in six maniacal patients.

It is generally regarded that the prognosis as to recovery is good, and of my cases six melancholic and six maniacal patients recovered, while one case of acute mania died from exhaustion, and one melancholic died of phthisis. At the present time six are still under treatment. I think that the reason why such a large proportion of maniacal cases appears in my series is to be found in the fact that as many as 75 per cent. of them are females. These consisted of six suffering from melancholia, eight from acute mania, and one from delusional mania, while only one man laboured under acute mania and four under melancholia.

Digitized by Google

This, I believe, has helped to a certain extent to produce the relatively large number of manic cases.

As a prophylatic measure, patients suffering from influenza should be isolated and cared for as infectious cases, as far as possible. It is of importance that they should be thoroughly treated, especially when they are known to have an unstable nervous system. During convalescence much can be done to avert a mental break-down by change of air and stimulating treatment.

BIBLIOGRAPHY.

Clouston. *Mental Diseases.*
Rorie. *Jour. of Ment. Sci.* 1901, p. 317.
Gowers. *Lancet.* 1893, ii. p. 73.

THE SURGICAL DEPARTMENT AND TEACHING OF SURGERY IN THE JOHNS HOPKINS HOSPITAL.

By E. SCOTT CARMICHAEL, M.B., F.R.C.S.

THE administration of a department in any branch of medicine is important in any hospital, but is especially so in one connected with a university or teaching school. The methods adopted for the efficient working of a hospital, and for the using of its material to the best advantage for teaching purposes, must always change, if the school is to keep pace with the advances of modern surgery.

There is nothing more instructive than an insight into the methods adopted in Continental and American schools. It may be of interest, therefore, to record the work as carried out in one of the youngest and at the same time most advanced schools in America—the Johns Hopkins Hospital in Baltimore. Although the University was opened for the preliminary subjects in medicine in 1876, it was not till 1899 that the Hospital was finished and became available for clinical teaching.

Endowed as it was by the founder, the carrying out of the building and equipment is in the hands of a board of trustees, who are laymen. By resolution of the trustees in 1893 an advisory board of the medical faculty was constituted "to report to the trustees from time to time their suggestions and to prepare and carry forward the proper arrangements for the instruction and graduation of medical students."

Digitized by Google

This advisory board is formed entirely from members of the staff of the Hospital. There are eleven members, all professors in different branches of medicine and surgery. They constitute the ruling body of the Hospital, and are in a position to realise the needs of the Hospital as acting members on the staff.

If one considers, then, the surgical department, which is a pattern of all the others in the Hospital, all the surgical beds in the Hospital are under the control of the surgeon-in-chief, who is at the same time professor of surgery in the University. He is assisted in his work by four associate professors of surgery, each specialising in a branch of general surgery, such as neurological surgery, genito-urinary surgery, orthopædic surgery, abdominal surgery, and so on. These gentlemen almost entirely confine themselves to their own branch, and to them are handed over by the surgeon-in-chief all cases in their own speciality, upon which they may operate or not as they like. There are also four or five "assistants in surgery," who assist the associate professors.

In addition to this senior staff there is a junior staff, consisting of a "resident surgeon" and three "assistant resident surgeons," who reside in Hospital for a period of from one to three years, or even more, and by whom the major part of the operative work of the Hospital is carried out. A resident surgeon of three years' standing is a surgeon of great operative experience, and has performed during his term of office a larger number and greater variety of operations than probably any other member of the surgical staff. He is then in a position, should he show the inclination or aptitude, to specialise in any branch of surgery he may wish, and may become a member of the permanent staff. The "associate professors" have for the most part received their appointment very shortly after completing their term of office as resident surgeon. They are thoroughly trained all-round surgeons, and in a position to specialise along certain lines. Their general operative work is for the most part finished at an early age, frequently before thirty-five. The system of training, from the practical operative point of view, is conducive to furthering the development of special branches on a sound basis.

Such is the constitution of the surgical staff, consisting of one head, who is all-powerful, with able assistants trained in every branch of surgery.

The Surgical Teaching.—This is carried out in the dispensary

Digitized by Google

(out-patient department), in the wards and operating-rooms of the Hospital, in the clinical laboratory and laboratory of experimental medicine. There are no systematic lectures either in surgery or in medicine. Students receive surgical instruction in their two final years of study. They receive a thorough grounding in surgical pathology, surgical diagnosis, operative surgery and the general principles of surgery.

A clinic (clinical lecture) is given once a week by the surgeon-in-chief throughout the year. Four to six cases are, as a rule, demonstrated, the students in turn examining each case, question and answer being the method adopted. This lecture is given to all the students studying surgery in the Hospital, numbering about fifty or upwards. Two similar clinics are given weekly by one of the associate professors.

Minor surgery is taught in the outpatient department by one of the associate professors, assisted by three assistants, twice weekly, to sections of the class, the system adopted being much the same as that in the Intern Clinic. In addition to these a "recitation" is given once a week on assigned subjects by the surgeon-in-chief.

A thorough course in *surgical pathology* is given by one of the associate professors for two and a half hours weekly. Systematic instruction is given in clinical pathological diagnosis, illustrated by pamphlets, photographs, museum specimens and microscopic sections. Demonstrations are also given of fresh material received in the surgical pathological laboratory. Students are compelled to take this course, and have the option, if they wish, of taking an "elective course" on the same subject.

Operative surgery is taught on animals once a week to successive sections from October to May. Each class is of five hours' duration. The effort to carry out as closely as possible the technique used in the general operating-room of the Hospital is a complete one.

The student is thoroughly grounded in asepsis and hæmostasia. He is taught to operate on the dog as if it were a human being, with all precautions for preventing loss of blood and infection of the wounds. At each operation there is the operator, two assistants and the anæsthetist. These rotate their positions during the various exercises. The anæsthetist makes a careful record of respiration, pulse and blood-pressure on a chart specially adapted.

One cannot but be struck with the thoroughness with which

Digitized by Google

the principles of operative surgery are thus instilled into the student in a way that he is not likely to forget. Abdominal operations and amputations bulk largely of those performed. Special named amputations are not taught, the student being left entirely to his own resource as to the flaps employed. The old classical amputations largely taught in medical schools in this country are purposely not mentioned.

This system of teaching operative surgery is one of the features of the Baltimore School. It is practical and most thorough in every way, but a method unattainable in this country.

In his final year the student also is instructed in ward work. The students are divided into three groups, each serving for three months in the surgical wards of the Hospital. During this period they take surgical cases and act as surgical dressers. They witness and assist at operations, and perform minor operations themselves. They make ward visits with the resident surgeon twice daily, sometimes more frequently, and receive bedside instruction from him. On the resident surgeon devolves a very large amount of the clinical teaching in the wards. The students assist him in turn at his operations.

Genito-urinary surgery is taught by one of the associate professors to final-year students. It consists of two courses, consisting of daily practical worki n the out-patient department and a weekly clinic.

The student is taught instrumentation, methods of washing out the bladder and urethra, massage of prostate and vesiculæ seminales, &c., during one half trimester (six weeks).

Orthopædic Surgery.—The associate professor gives clinical instruction three days weekly on orthopædic cases, their treatment, application of splints and their uses.

There is also a special ward clinic delivered once a week. Three days a week there is also a demonstration on out-patient cases.

Neurological Surgery.—There is a weekly clinic of the associate professor on the neurological cases in the Hospital.

The student has thus a thorough training in every department of surgery. He has the advantage of being instructed in the special branches of general surgery by surgeons who are working specially in these branches, and is thus instructed in the most up-to-date methods.

Digitized by Google

The system and method appeals to an outsider as sound and in many ways ideal. The teaching of surgery is entirely clinical and practical.

The student, if he does all that is required of him, is well grounded in all the rudiments of surgery, and there is very little, if anything, that is omitted.

It is a system more or less new, but in keeping with the most recent advances in surgery, and is one to which reformers might well look to gain ideas for the improvement of the older systems of teaching. It is one, however, which would be difficult to carry out in an old-established medical school.

A REVIEW OF SIXTEEN MONTHS' WORK IN THE SKIN DEPARTMENT OF THE ROYAL INFIRMARY, EDINBURGH.[1]

By NORMAN WALKER, M.D., &c.,
Physician in Charge.

THE fact that after prolonged wanderings the skin department has at length found a home which, as an Irishman might say, is for a time, at least, permanent, has given me greater advantages than were available to my predecessor. Of these I have endeavoured to make use, and to-day I present some of the results of my sixteen months' experience. After three months of experiment we adopted the card system as the most efficient means of keeping the cases; the numbers are so great that books were out of the question. Certain special cases are kept on large cards, on which can be stamped outlines on which the distribution of any eruption can be graphically shown. The system requires that everyone concerned shall do his or her part thoroughly, and I think I may claim that considering we have in those sixteen months seen and taken notes of nearly 2500 cases, and that we can lay hands in a moment on a record of each, testifies to the care shown by my assistant physicians, the house physicians, the nurses, and my lady secretary who is in ultimate charge of the cards. From the first set of cards she makes a cross index of diseases, so that I can at any time lay hands on any case or group of cases required to illustrate a lecture. Once a month the cases are tabulated on a half sheet of paper, and we thus have a very

[1] Read before the Medico-Chirurgical Society, May 20, 1908

Digitized by Google

ready means of noting the seasonal incidence of some diseases and the epidemic occurrence of others. The number of some diseases are not a little remarkable, but of course hospital statistics in a town like Edinburgh have to be very carefully sifted. In Vienna, for example, nearly all cases go straight to the Allg. Krankenhaus, here a filtration takes place through the dispensaries, and our statistics undoubtedly show an undue proportion of some of the less common diseases. I propose to-day to follow (though I have elsewhere criticised it adversely) the simple alphabetical order, and to refer to those diseases which I consider present points of special interest in the statistics, as well as to those diseases which are at present attracting general interest. In the case of certain of the rarer diseases I am fortunate in being able to show, thanks to Dr. Low, a life-like representation of the condition at the time of admission, and I take this public opportunity of saying how much the skin department and the students of this school owe to his artistic skill.

The first disease to which I think attention falls to be directed is alopecia areata. It is certainly remarkable that out of 2500 cases we should have had no fewer than 106 of that disease. In Croker's statistics, of 10,000 hospital cases 253 were alopecia areata, of 5000 private ones 291. (Private statistics are not so dependable as hospital ones. Of my last one hundred cases seven were alopecia areata, and in a hundred taken at random there were nine. But though these figures happen to support my view, I think it better to leave them out of consideration.) In M'Call Anderson's statistics, published with the report of the Glasgow Skin Hospital, just at the time of his death, there were 1860 out of a total of 61,500 (41 years). If the proportion in London had been as high as with us, Croker's figures would have been 424 instead of 253, while the Glasgow figures would have been 2607 instead of 1860. I have not time to-day to go more closely into our statistics, but I may note that the last three months have provided us with no fewer than twenty-nine cases of this disease; almost twice the usual average. Believing as I do in the contagiousness of this disease, I am extremely interested in these figures.

I do not think I can do anything more usefully to bring before the Society the scandal of favus in Edinburgh than by marching through the theatre a small detachment of the cases at present under our care. We all knew that favus was a disease which

Digitized by Google

was common in Edinburgh, but I question whether any of you would have believed that we could, without difficulty, lay hands on nearly one hundred cases of this really terrible disease. In the better classes it is easily cured, but when it gets a hold, as it does in the lower classes, it is, under ordinary circumstances, an incurable disease, and the unfortunate sufferers are cut off from education, and their future is easily prognosticated. Some of these cases have been under our care for three or four years. One of them has had the hair removed no fewer than eight times, and has thus been on the verge of cure over and over again. But we have no control over them, and they disappear when in the opinion of their parents they are nearly well, and only return when the disease has resumed its old grip. I am enough of a Socialist to maintain that it is the duty of the authorities to take these cases in hand, and stamp out, as they easily could do, this blot upon Edinburgh, and I hope to impress this view upon the new Medical Officer of Health for the city.

Herpes Zoster.—Like other dermatologists I have long been struck by the apparent epidemic occurrence of this disease, and I am rather disappointed that my statistics do not demonstrate this fact more clearly. Something of grouping is seen, but not so much as I would have expected. I daresay one reason is that the pain of herpes keeps many people in bed, and it is not so easy to drop into the infirmary for free advice, while another is that many cases go to the medical waiting-room, and are admitted to the medical wards. There were altogether twenty-four cases—seventeen in males, seven in females. Four cases occurred on the 2nd and 3rd of February of this year. I would be much obliged if those who have cases in private at this time would inform me of them.

Impetigo Contagiosa.—The figures for this disease pretty clearly demonstrate its epidemic character. The general recent increase is due to the closer supervision now exercised in the Board schools.

I would just like to say that in my experience the main element of speedy success is the thorough application of properly made starch poultices. When a case is not doing well it will generally be found that these are badly made. The figures are as follows:—1907, January, 7; February, 8; March, 5; April, 10; May, 10; June, 17; July, 12; August, 26; September, 17;

Digitized by Google

October, 16; November, 17; December, 14. 1908, January, 14; February, 24; March, 23; April, 21.

We have had twenty-three cases of lupus erythematosus. There is nothing special to record of these. As usual they have proved obstinate and capricious in their response to treatment. The most interesting fact I have to record regarding them is in connection with the theory that they are in a sort of indirect way of tuberculous origin. This theory was put forward by the French school just after it had been made sufficiently clear to everyone that the disease was essentially a different one from lupus vulgaris. The French theory (held not only in France) is that although the disease is not itself tuberculous, it is nevertheless dependent upon toxins produced by the tubercle bacillus in some hidden focus. Every case of lupus erythematosus occurring in an individual with tuberculous glands, or the evidence of these in the past, was triumphantly held up as a proof of the correctness of this theory. It is not easy to prove a negative. If a patient had lupus erythematosus and anyone asserted that this was in some indirect way the result of tuberculosis, it was not easy to demonstrate that it was not, and one was compelled to wait for the fortunately few cases who died from some other cause while still affected by lupus erythematosus. Some of these have shown tuberculosis on examination, others have not. It has always appeared to me that any case of the disease in which the absence of tubercle could be demonstrated demolished the argument, but this view is not accepted by the supporters of it.

When Calmette's reaction was first made known it did not occur to me to make use of it in this connection, and the disastrous results of one of the very few experiments which I made determined me not to make any more. But in Pirquet's reaction we have a test which is, so far as I can see, quite harmless and likely to prove very useful. I show the first case in which I made use of it. The girl had on her hand a condition which I had no hesitation in diagnosing as lupus erythematosus, but on the nose the appearances were such as might be confused with lupus vulgaris. Accordingly, to clear the matter up, she was vaccinated with tuberculin, with an entirely negative result.

I have repeated this on one or two other cases. Some have shown reaction, always slight, and others have not. As none of the patients were in the moribund condition in which the reaction

Digitized by Google

is stated not to appear, I am disposed to regard the experiment as, on the whole, in favour of those who look on the disease as non-tuberculous, although I know perfectly well that those who hold the other view will direct all their attention to the fact that some of my cases reacted.

I intend to continue the experiment on all available cases, and I shall faithfully record the results of these and of control cases.

It must, however, be kept in mind that a positive reaction does not prove that any particular eruption on the skin is of a tuberculous nature.

I saw not long ago a young lady with an eruption on the face which I had no hesitation in diagnosing as rosacea. She had been under the care of an expert in another city, who, having found Calmette's reaction positive, came to the conclusion that the skin eruption was tuberculous. He then proceeded to treat it with considerable doses of tuberculin, with at first distinct improvement. I have little doubt that there was in that case some hidden tuberculosis which was responsible for the reaction, while the improvement which followed injections was due to the improvement of the general health, or was possibly a mere coincidence.

Lupus Vulgaris.—I do not propose to weary you with details of treatment or discussion of the number of volts, &c., which ought to be used in connection with X-rays. But I think it will be of interest that I should demonstrate some cases which have been long under treatment in the Skin department. As I have said elsewhere, I think the chief service which Finsen rendered to Medicine was in demonstrating anew the merits of perseverance. These cases, the former extent of which can easily be seen from the scars, demonstrate what can be done by that useful quality. I am not, however, sure whether the oleate of mercury which Jamieson has a large share of the merit of introducing to the profession in connection with this disease is not very nearly as useful as the X-rays, and I am certain that Hutchinson's old method of boring out nodules with a match dipped in the solution of the acid nitrate of mercury will cure a great many cases. It is the combination of two or more methods that usually leads to success, and I am no blind adherent of any one means. In connection with X-ray treatment I, some years ago, drew attention to the greatly increased proportion of cancerous developments in cases which

Digitized by Google

healed under treatment by this method for long periods. Similar observations have been made in other quarters. Sequeira found that nearly 3 per cent of his male cases of lupus developed epithelioma, and Dacosta had seven cases out of seventy-two treated by X-rays. I have no time at present to discuss the connection between the treatment and the application, important though it is; but I wish, in mentioning it, to point out the importance of being on the constant watch for the early symptoms of malignant disease.

It is, I think, generally taught—I speak liable to correction—that carcinoma in young persons is specially virulent. I am, of course, not in a position to speak of general carcinomas, but I must say that it has not been my experience in lupus cancer. I am able to-night to show one case and a cast of another which demonstrate the curability of some at least of these cases. My first case was that of a young lawyer who has been under my treatment for many years. With the progress of his lupus we are not at present concerned. Some four years ago he developed a warty growth, which, when I saw it, had reached the size of a walnut. It was obviously malignant, and I told him that it must be removed. Mr. Wallace kindly took him in charge and excised the growth, which, on examination, was beyond all doubt an epithelioma. The condition of the parts around was such that in spite of all efforts the edges could not be brought together; the wound granulated from the bottom, and ultimately after several months healed up. Very soon, however, the growth reappeared, and, as these patients will so often do, he kept away from me, hoping against hope that it would disappear. When I next saw him the growth was as large as an orange. A surgical operation would have been a formidable one and the after-treatment very prolonged, so, after laying the facts before him, it was agreed that I should treat the growth by erasion. This I did, and came very soon down to a firm layer of fibrous tissue, which I thoroughly scrubbed with caustic potash, as recommended by many of the older surgeons. The growth reappeared before he left the home, and in six weeks was nearly as large as before. I readmitted him, repeated the scraping and applied arsenious acid. The pain of this application was very great, but he bore it most nobly. He was only a week in the home, and when he left the granulations looked healthy. Next time I saw him there was a small recurrence, which was again scraped under local anæsthesia and treated by chromic acid.

Digitized by Google

I am satisfied that the results are at least as good as could have been achieved by any cutting operation, while it would have taxed even the plastic skill of the late Mr. Annandale to have made flaps from the lupus tissue.

The patient, whom I now show along with a very bad photograph taken by myself of the condition before operation, was treated at once by erasion and the application of chromic acid with, I think it will be admitted, complete success.

A most interesting case, of which I can only show a cast, was that of a patient who was treated in a provincial infirmary for lupus by the X-rays. She was a very intelligent girl, and made herself so generally useful that she apparently had the run of the place, and illogically argued that if some X-ray treatment was good for her disease then more would be still better. She accordingly, whenever opportunity occurred, and it occurred daily, used to give herself a dose of the X-rays. The cast shows the condition when I first saw her in August last, and I must explain that unfortunately she came up the day that Dr. Low was going on holiday, and the cast was taken by myself and painted by him from notes and from memory. The girl came to me prepared to hear the verdict that her arm must be removed, and it was with considerable misgiving that I explained to her mother the whole reasons of delay, and took upon myself the responsibility of treating it by less radical measures. The edges were scraped and the whole surface treated with arsenious acid paste. She bore the suffering admirably, and the results have been most satisfactory. I saw her last week, when a small recurrence, the size of a small hazel-nut, was present. This I removed under local anæsthesia, and I have little doubt that it will do well. She has a perfectly useful right hand.

The first case in which I used the new tuberculin was one of mixed infection (tubercle and syphilis), and the patient was a mere wreck of humanity. Dr. Shennan kindly undertook the estimation of the index, which was then supposed to be essential to the carrying out of the treatment. Her improvement was very marked, and I was greatly encouraged to continue with the treatment. But it was soon evident that if every case was to be controlled by the index, only a very small percentage of my patients could obtain the benefit which was so obvious. Accordingly I joined the ranks of the empirics, and unless there were obvious reasons to the contrary I gave all my severe lupus cases an injection of 1·1500th

Digitized by Google

of a milligram every four weeks. In all of them the result has been satisfactory, the most noticeable feature being the way in which the patches break up, strands of healthy tissue appearing among the areas of the disease.

The patient whom I now present was entirely unable to work owing to the extensive lupus of both his arms. He is now able for, and has been offered, work, but he is so impressed with the improvement that he proposes to continue working at the treatment for a time longer. In his case the systematic inunction of oleate of mercury and exposure to the X-rays have been used in addition.

I have not yet commenced the administration of tuberculin by the mouth, but if it is as satisfactory as is reported by Latham, it would seem that we have still further simplification of treatment at our disposal.

Molluscum Contagiosum.—We have had in sixteen months, out of 2500 cases, eleven cases of this disease. In M'Call Anderson's 61,000 cases only thirty-two occurred. Five of my cases were regular attendants at the public swimming baths. The connection between molluscum contagiosum and public baths is well recognised. In the East (not the East of Scotland) it is known as the itch of the bath. It does not by any means occur always on parts which are covered by the bathing-dress. I believe the best method of treatment is to seize each tumour with a pair of forceps and eviscerate it. Ordinary squeezing is useless, for that merely squeezes out part of the contents; the pressure must be such as to cause the whole tumour to shell out of the skin.

This year I have had a remarkable series of ringworm of the nails. In my book I refer to this as an astonishingly rare affection, and I am still astonished at the rarity of the disease in children. but I am now wondering whether it is my carelessness or coincidence which has brought together in three or four months no fewer than five cases of ringworm of the nails in adults. They are not new cases, some of them have lasted for as much as nine years, and it is deplorable to think how much disease may have been spread innocently by their owners. One of these cases I am able to demonstrate, others though not here in the body are here in the wax, for I can show casts of them either by Dr. Low or by my secretary, Miss Rae. The fungus of which I hand round the photograph, taken in the College of Physicians' laboratory, is

Digitized by Google

extraordinarily abundant, and one is really at a loss to understand why these patients did not constantly suffer from outbreaks of the disease on other parts.

Of rosacea we had sixty-two cases. Of these, five are noted as suffering from indigestion, three from constipation, two from headaches: one "used to be troubled with indigestion," in another the appetite is noted as poor, and another is alcoholic. In fifteen it is noted that the patients asserted that there was nothing wrong with their digestion, and as the question was generally asked we may assume that at all events the majority of the remainder did not suffer severely.

I am a very thorough believer in the seborrhœic nature of this disease, and over and over again I have had evidence both in hospital and private work which has strengthened my belief. But I hardly hoped to be able to demonstrate the application of the theory so convincingly as I am able to do to-day. The patient whom I show is the original of the illustration in the last edition of my book. She came to the Infirmary on 12th February.

Her card says she has suffered from the eruption for twelve years. She has no indigestion. She has marked seborrhœa of the scalp. She has since carried out treatment for the seborrhœa, and when she came to see me on Monday I did not recognise her. Neither I think will you.

She is further interesting to me in that she has typical psoriasis on her knees, but I do not propose to weary the Society with my own fads.

Vaccine Therapy.—Perhaps general interest in skin departments is at present most directed in the merits of vaccine therapy. I may say at once that in the case of certain diseases the method recalls the Chinese incident of burning down the house in order to get roast pig. There are such simple, such efficient, such safe means of treating the diseases I refer to, that I have not thought it my duty to experiment on them.

In others I am a thorough convert to the new method. In generalised furunculosis there is no doubt of its efficacy, but it is in sycosis that I have found it of most real help. It is remarkable how opinions differ. When in the early days of enthusiasm for X-ray treatment of this disease I felt compelled to enter a protest against the excessive claims put forward I was referred to as something like a dermatological Mrs. Partington. And now I find my

Digitized by Google

friend Dr. Whitfield, one of the earliest and most scientific of the opsonists, expressing himself with some doubt as to the merits of the vaccine method in this disease. One can only speak as one finds, and I can simply say that cases that have defied all other treatment have yielded to injections to vaccine prepared from their own staphylococci for me by Professor Ritchie. One of these cases I present. His case was so severe that he was about to be dismissed from his situation, and when I tell you that he was not a salesman in a Princes Street shop but a warder in the Calton Jail you can understand how bad he was. He has had seventeen injections, and is now practically well.

I have used this treatment in two cases of pemphigus foliaceus. One of these cases will be shown later by Dr. Low, and, in the meantime, I prefer to reserve my judgment on its merits. At all events it has done no harm.

I think it will be expected that I should say something of this treatment in acne. Briefly, my opinion is that in uncomplicated cases of that disease it is not of much value. There are cases of pustular eruptions on the face which masquerade as acne, but are not that disease; and believing, as I do, that acne is due to a definite organism, I fail to see why one should expect acne to disappear on the injection of staphylococcal vaccine.

I had in my ward a patient with psoriasis, who at the same time suffered from furunculosis. He was treated with vaccine made from his own cocci, and though his boils improved his psoriasis did not.

Letter to the Editors.

SIRS,—The accompanying letter from Professor Greenfield, whose consent I have to forward it to you for publication, is a valuable corroboration of the view I expressed in last month's *Journal*.—I am, &c., STUART M'DONALD.

MY DEAR M'DONALD,—I need hardly say that I fully agree with your general views upon the probable results of the recent changes in the Curriculum in so far as it relates to pathology, and as to the serious effects upon the whole teaching of medicine and surgery. I have been for so many years engaged in a fight for pathology that this last failure makes me hopeless of success in

Digitized by Google

seeing it placed on a proper footing. My chief hope lies in the fact that the results will prove so disastrous that there must some day be a great change; not, I fear, before the reputation of the University is gravely affected.

At every step in the consideration of the proposed New Curriculum I have pointed out what seemed to me the inevitable result of the proposed changes, but I have had little or no support.

Those who remember the state of affairs before the last University Commission will understand how retrograde the changes are. At that time, although the subject was then far less extensive and complex, it was very difficult to teach pathological histology and anatomy practically, because students did not know normal histology or general anatomy, and had to learn much of it in the practical pathology classes. And with such important subjects as anatomy and physiology to master at the same time, it was impossible to give sufficient attention to pathology. Hence, although the standard of examination was low, the percentage of failures in pathology was very high.

At the Commission, in spite of strong opposition, the sound sense and judgment of the Commissioners upon the facts laid before them led to a change. The enormous improvement in all respects was speedily apparent. It became possible for students to take up the subject really and practically. The great advances and developments which have come so abundantly since that time have presented no difficulty to the serious student. He came to the subject with adequate training in anatomy and physiology, and in the necessary practical methods, and with time for the various branches of practical work. In nothing has this improvement been more apparent than in the attendance in pathological bacteriology, which is not a compulsory class. But every opportunity for additional instruction has been welcomed, demonstrations of more advanced nature being thronged by eager and intelligent students.

Moreover, this interest has been maintained after the necessary examinations had been passed. Indeed it has been found impossible to satisfy the demand for opportunities for more advanced work by students.

The results on examinations have been very striking. With a higher standard, not perhaps so high as it should be, and with

Digitized by Google

a far larger range of subjects, the percentage of failures has been far lower. Few men of average ability, if they have been able to work steadily, have proved unable to pass at their first appearance. A large part of the rejections have been of those who have failed in one or more of the subjects of the Second Professional, and who had, therefore, still to work at anatomy or physiology.

What has been equally striking has been the improvement in relation to clinical work. Men have been able to follow the advances in what is called clinical pathology and in all the other associations of pathology and practical medicine, and although it must be allowed that there are advantages in some knowledge of general pathology and of training in its methods before commencing clinical work, it is not found to be any serious hindrance to commence their study whilst the rudiments of auscultation and percussion and the like are being learnt. But of this, more later.

In future, if the proposed arrangements are carried out, a large proportion of students must either attend the practical pathology class before practical physiology is completed, or must postpone it till after the systematic course. The latter means that the rudiments and the practical methods, which are essential for proper understanding of the lectures, will not be known, whilst the most advanced parts of the subject are being considered. At this moment, students are attending my practical classes some in their second year, some of them having just begun normal histology. Many are also attending demonstrations in anatomy designed for first-year students.

It must be remembered that the University has no power to prevent a student from attending any course, however advanced, before he has attended those courses which are essential to a proper understanding of the subject. Nor can he be made to delay attending such advanced classes until he has passed, *i.e.* shown a competent knowledge of the earlier subjects. I believe that there will be far more of such overlapping in the working of the New Curriculum, especially as regards the special courses.

To some extent the Carnegie Trust aids to check this, but it is much to be desired that the University should possess some power to prevent such unwise action, in the interests of the students themselves.

I do not see how a student who is working for an examina-

Digitized by Google

tion at Christmas in so important a subject as anatomy can with sufficient detachment of mind or available time, take up the most fundamental and difficult problems of general pathology, especially if he has not done the preliminary practical work. He will of course be ignorant of all the phenomena of disease and even of the action of chemical agents and poisons on the living tissues. But it is difficult to tell how it will work out. I do not envy the student's position.

Whatever may be the immediate effect on the Curriculum, there is one great object to be kept in view; that is, to ensure that Edinburgh maintains, if possible, the reputation which it has gained as a scientific school, and especially in pathology.

I do not think that any reform can be expected from within the University. That so serious and radical a change—one which affects the whole range of teaching and therefore of practice—should have been made after full consideration, and in disregard of the opinion of nearly all the leading teachers in pathology and medicine, makes it unlikely that anything but the lessons of experience can be effective.

My hope lies in the fact that amongst the younger teachers in the Medical School so large a number are not only accomplished pathologists, but give prominence to pathology in the teaching of their various subjects. Many of them are, or will be, examiners in the University, and they can ensure that a high standard of pathology is maintained in the subjects of the final examinations.

And this leads me to the question of further reform. It will not long be possible to relegate pathology to the earlier half of the Curriculum, and to leave to chance all further study of its most important relations to practical medicine and surgery. Even now, from a combination of causes, it is difficult for students to attend the post-mortems on cases which they have seen in the wards, or to have any opportunity for fuller study—microscopical and other—of the diseased organs. One knows that many of the more earnest students will do their best to make up for this, but for the great majority it will mean an absence of that knowledge upon which diagnosis, and therefore treatment, largely depend.

Before long there must be a change. My own view is that there should be an early systematic and practical course of general pathology, taken as soon as the student has acquired a sufficient knowledge of the earlier subjects to be able to profit by

Digitized by Google

it, followed by an examination. Then a later course, which should include more advanced bacteriology and parasitology, and special morbid anatomy and histology, and should be both practical and theoretical. This should be followed by examination, at an intermediate final, not to be taken before the end of the fourth year.

That such an arrangement is possible has been demonstrated elsewhere, for example at Cambridge, although I should advocate considerable modifications of the system there in force.

To carry out such a change the co-operation of all the teachers of medicine and surgery would be necessary. It is they, and not the pathologists, who must be the movers in the matter. I am sure that they would almost unanimously be in favour of such a change. And it is to them that we must look.

Why should not the Colleges lead the way in the reform? If they did, with the same spirit and energy as they have shown in encouraging research, the University would, before long, be compelled to follow their lead.—Yours sincerely,

W. S. GREENFIELD.

Births and Deaths in Eight of the Principal Towns of Scotland during April 1908.

DURING the month of April 1908 there were registered in the towns of Glasgow, Edinburgh, Dundee, Aberdeen, Paisley, Leith, Greenock and Perth the births of 4475 living children, of whom 2284 were male and 2191 female. These births are 308 more than in March, but 17 fewer than in April 1907. They are equivalent to an annual birth-rate of 29·6 per thousand of the estimated population of these towns, a rate which is 2·9 more than that for March, but 0·6 less than that for April 1907. The birth-rate for the month ranged from 33·2 in Greenock to 24·5 in Edinburgh. In Glasgow it was 32·1; in Paisley 31·1; in Dundee 30·4; in Leith 28·5; in Perth 28·0; and in Aberdeen 25·6.

Of the 4475 deaths, 316, or 7·1 per cent., were illegitimate. This rate of illegitimacy is 0·5 more than that for the previous month, and 0·2 more than that for the corresponding month of last year.

Deaths registered in these towns during April numbered 2774, of which 1406 were of males and 1368 of females. These deaths are 260 fewer than those registered in March, and 309 fewer than those registered in April of last year. The equivalent annual death-rate was 18·4, a rate which is 1·0 less than that for March, and 2·3 less than

Digitized by Google

that for April of last year. The death-rate for the month ranged from 20·4 in Glasgow to 14·1 in Leith. In Perth it was 18·7; in Dundee 18·3; in Greenock 17·6; in Paisley 17·5; in Edinburgh 16·7; and in Aberdeen 14·8. In Edinburgh and Greenock the death-rate was higher than in the previous month, but in the other towns it was lower than in that month.

Of the 2774 deaths, 1016, or 36·6 per cent., were of children of less than five years old; and 723, or 26·1 per cent., were of persons of over 60. The former are 113 fewer than in March, and 91 fewer than in April of last year. The latter are 78 fewer than in March, and 12 fewer than in April of last year.

Deaths of children of less than one year old numbered 574, a number which is equivalent to an infantile mortality-rate of 145 per thousand births. These deaths are 28 fewer than those for March, and 16 fewer than those for April of last year. This rate is 2 less than that for March, and 1 less than that for April of last year. The infantile mortality-rate for the month ranged from 159 in Glasgow to 90 in Leith. In Edinburgh it was 156; in Dundee 137; in Aberdeen 130; in Perth 123; in Greenock 119; and in Paisley 99. In Glasgow and Edinburgh this rate was higher than that for March, but in the remaining six towns this rate was lower than in March.

Deaths from the principal epidemic diseases numbered 316, which is 85 less than in March, and 202 less than in April of last year. The equivalent annual death-rate from these causes amounted to 2·1 per thousand, a rate which is 0·5 less than that for March, and 1·4 less than that for April of last year. The death-rate from these causes ranged from 2·8 in Glasgow to 0 in Perth. In Paisley it was 2·6; in Dundee 1·9; in Edinburgh 1·5; in Aberdeen 1·3; in Leith 1·2; and in Greenock 0·7.

There were no deaths in these towns from small-pox during the month. Deaths from measles numbered 147; they are 62 fewer than in the previous month, but 102 more than in April of last year; of them 102 were in Glasgow, 25 in Edinburgh, and 12 in Paisley. Deaths from scarlet fever numbered 20, from diphtheria 22, and from enteric fever 3. Deaths from whooping-cough numbered 74, a number which is 20 less than in March, and 150 less than in April of last year. Deaths from cerebro-spinal meningitis numbered 28, which is 1 more than in March, but 149 fewer than in April of last year; of them 20 were in Glasgow, 4 in Leith, 2 in Edinburgh, and 1 each in Dundee and Greenock. Deaths from diarrhœa and dysentery numbered 22; they are 5 fewer than in March, and 2 fewer than in April of last year.

Deaths from influenza numbered 10; from puerperal septic infection 6; from malignant disease 130, of which 82 were ascribed to

Digitized by Google

carcinoma, 6 to sarcoma, and 42 to other or unspecified forms of cancer. Deaths from heart disease numbered 269; from apoplexies 164; from premature birth debility 109; and from alcoholism 6.

Deaths from pneumonia numbered 303, which is 50 fewer than in March, but 11 more than in April of last year. Deaths from bronchitis numbered 220, and are 66 fewer than in the previous month, but 17 more than in April of last year. The deaths from pneumonia constitute 10·9 per cent. of the total deaths for the month, while those from bronchitis constitute 7·9 per cent. of the total.

Deaths from all tuberculous diseases numbered 363, which is 13 more than in March, but 67 fewer than in April of last year; they amount to 13·1 per cent. of the total deaths registered during the month. Of these deaths from tuberculous disease, 224 were ascribed to phthisis, 63 to tuberculous meningitis, 37 to tabes mesenterica and tuberculous peritonitis, and 39 to other forms of tuberculous disease.

Deaths from violence numbered 117. Of them 6 were registered as being due to suicide, 3 being by hanging, 2 by drowning, and 1 by precipitation.

Of the persons dying in these towns during the month there were 3 males and 3 females aged 90 years and over, the oldest of them being a widow, aged 93.

Meetings of Societies.

Edinburgh Medico-Chirurgical Society.

A MEETING was held on 6th May, Dr. James Ritchie, President, in the chair.

Dr. Douglas Argyll Robertson and Dr. Hughlings Jackson were elected honorary members of the Society, and Dr. Ivan P. Pavloff, St. Petersburg, Sir Henry R. Swanzy, Dublin, and Mr. Francis J. Shepherd, Montreal, were elected corresponding members.

Dr. Luke demonstrated a new dropper for ethyl chloride and an open ether mask.

Professor Chiene, C.B., described a simple method of preparing catgut by soaking in a mixture of ether, biniodide of mercury, alcohol and 5 per cent. of glycerine. He then showed how to demonstrate colour-photographic transparencies without a lantern. He did not approve of the lantern as a teaching accessory, and thought a series of stereoscopic pictures was much preferable. He showed a stereoscope combined with a large magnifying glass which gave excellent results.

Dr. Waterston referred to the difficulty of multiplying copies of

Digitized by Google

colour photographs. Dr. J. S. Fowler pointed out that a pale blue screen added greatly to the clearness of the pictures in artificial light.

An interesting discussion followed a paper by Dr. Melville Dunlop on "Some Considerations regarding Pneumonia in Children drawn from an Analysis of 500 Cases." Of these 147 had been lobar pneumonia and 353 broncho-pneumonia. Dr. Dunlop said that the altered pulse-respiration ratio was perhaps the most important early diagnostic sign in broncho-pneumonia; auscultation was a more reliable guide than percussion, and physical signs should not be overlooked high up in the axilla. Treatment should be directed towards the avoidance of digestive disturbance, the maintenance of vitality, the suitable stimulation of the heart and the prevention of spread. He advocated plenty of fresh air, but was not in favour of open-air treatment. Plenty cold water should be allowed. He had a tent placed round the bed and exposed his patients to the vapour from one part of eucalyptus in five of water. The position of the child should be frequently changed, and it should be carried about at intervals to avoid hypostatic congestion. He deprecated the prolonged use of poultices and relied on alcohol as a stimulant, reserving its use till weakness began. He gave strychnine every four hours as routine practice.

The President agreed that exposure to cold air was inadvisable.

Dr. James Carmichael referred to sudden collapse of the lung as a cause of acute symptoms.

Dr. Playfair thought that cough mixtures of paregoric and ipecacuanha were not of such service in allaying cough as chloral or bromide. He did not hesitate to give small doses of antipyretics in addition to the cold pack.

Dr. John Thomson referred to recurrences in pneumonia. He had seen a child who had three attacks of broncho-pneumonia and one of croupous pneumonia, and another case where there had been three attacks of croupous pneumonia and one of broncho-pneumonia. In certain cases of croupous pneumonia Dover's powder was of great benefit. He believed in open-air treatment. If a patient were kept warm, even cold fresh air would do good.

Dr. William Russell said that catarrhal pneumonia and broncho-pneumonia were not the same thing. Broncho-pneumonia was histologically the same as croupous pneumonia and was due to the same organism. Differences in the virulence of the organism accounted for different clinical types.

Dr. George Hunter discussed an alteration of the type of breathing in pneumonia, where the pause occurred at the end of inspiration and was omitted after expiration. He ascribed this to undue stimulation of the respiratory centre. He was unable to satisfy himself on

Digitized by Google

pharmacological grounds that strychnine could be of benefit, and he thought potassium citrate should be used to diminish the coagulability of the blood.

Dr. J. S. Fowler said that direct auscultation often revealed physical signs before they could be heard by the stethoscope.

Dr. Church said he had not found oxygen of service, but thought ozone did good.

Dr. De Watville mentioned the benefits of good window ventilation.

Dr. Drummond said that the change in the respiratory rhythm which Dr. Hunter had referred to was an important early diagnostic sign, but it occurred after exercise and in other conditions.

Dr. Cowan Guthrie referred to cases which he had treated with serum and by cupping.

Professor Chiene, C.B., said he had long taught that hectic fever in tuberculosis could not occur without mixed infection. He thought it probable that mixed infection was the explanation of some of the more severe manifestations of pneumonia.

Edinburgh Obstetrical Society.

THE sixth meeting of the sixty-ninth session was held on Wednesday, 13th June, at 8.30 P.M., Professor Stephenson, the President, in the chair.

After the reading of the minutes of last meeting and other private business Dr. Munro Kerr read notes on "A Case of Angular Pregnancy," which very closely resembled ectopic gestation. The patient complained of pain for some days, associated with hæmorrhage. On examination a small tumour was discovered in the neighbourhood of the right tube. Two days later a decidual cast was shed, but no ovum. The cast suggested ectopic gestation. Owing to the satisfactory condition of the patient immediate operation was not performed. The ovum, along with the remains of the cast, was expelled a day or two later. Subsequent examination showed that the swelling in the neighbourhood of the tube had disappeared. Dr. Kerr pointed out that similar cases had been described by French observers and by Howard Kelly.

The President took exception to the term "angular pregnancy." He pointed out that all pregnancies should come under the terms uterine or extra-uterine.

Dr. Haultain also took exception to the term, and said he was inclined to the opinion that the case was really one of interstitial pregnancy, bulging and rupturing into the uterine cavity.

Digitized by Google

Dr. Kerr also read to the Society notes on a case of "Death of a Fœtus in Utero at the Thirty-sixth Week." The patient was a three-para, æt. 33. Her first pregnancy ended in still-birth at full-term, the second and third pregnancies in premature still-births. Owing to the history patient was kept in bed towards the close of her pregnancy, and given chlorate of potash. The fœtal heart-sounds were normal up to the Monday of the thirty-sixth week; on the Monday they were changed, the second sound being accentuated in a way resembling the accentuation got in cases of chronic nephritis. The same change was noted on auscultation three and four days later. On the following Monday there were no audible sounds.

Dr. Munro Kerr read a third communication to the Society on "Rupture of the Uterus, with Remarks on Diagnosis and Treatment, based on a Series of Fourteen Cases." After giving, for descriptive purposes, a classification, Dr. Kerr proceeded to particularise numerous predisposing and exciting causes of ruptures. In noting the importance of symptoms, Dr. Munro Kerr drew particular attention to the fact that in cases in which rupture was due to the presence of a cicatrix the symptoms may be relatively slight. In regard to treatment, Dr. Munro Kerr stated that he preferred plugging to hysterectomy.

Dr. Haultain, Dr. Fordyce and others made remarks upon the communication.

Dr. Fordyce then read to the Society notes on a case of hysterectomy, for fibroid tumour, under spinal anæsthesia. The patient was the subject of a grave cardiac lesion which had previously been regarded as a distinct contra-indication to surgical interference owing to the risk of a general anæsthetic. Tropa-cocaine was used to induce spinal anæsthesia, with most satisfactory results. The operation lasted forty-two minutes.

Dr. Haig Ferguson, Dr. Struthers and others made remarks on the case.

The following specimens were then exhibited :—

1. By Dr. Fordyce—(*a*) large interstitial fibroid of uterus; (*b*) fibroma uteri which caused dangerous flooding eight years after menopause; (*c*) necrobiotic fibroma uteri.

2. By Dr. Lamond Lackie—(*a*) cancer of cervix, removed by abdominal route; (*b*) degenerating fibroid; (*c*) bilateral ovarian dermoids.

Glasgow Medico-Chirurgical Society.

FIFTEENTH MEETING, 1st May 1908; the President, Dr. Walker Downie, in the chair. There was a fair attendance.

Digitized by Google

1. Dr. James Adam read a short paper on "The Pathology and Treatment of Atrophic Rhinitis." Disease of certain of the accessory sinuses will be found in at least 50 per cent. of the cases, if sufficient care is taken in the examination. Atrophic rhinitis is the end stage of hyperplastic purulent rhinitis, and in support of this statement we have the frequency of sinusitis, the presence of hyperplasia side by side with atrophy, the occurrence of the hyperplastic form in the children of mothers suffering from the atrophic condition, and the similarity of the histological changes in these children, in atrophy and in simple sinusitis; and the presence of consanguinity in 50 per cent. of the cases points to a condition of the nasal mucous membrane, and to a certain conformation of the skull which render the patient liable to microbic invasion. In discussing the question of treatment reference was made to the use of submucous paraffin injections to reduce the large space in the nostrils, and also to ionisation. The paper was illustrated by patients and microscopic sections.

2. Mr. J. H. Pringle showed a patient on whom he had performed the inter-ilio-abdominal amputation for sarcoma. He read a short note on this extensive operation, and referred to the published records of other cases—not a large number. Mr. Pringle was complimented on the successful result in his case.

3. Dr. T. K. Monro read brief notes of a case of rheumatic hyperpyrexia treated by the cold bath. As the patient was unable to stand salol in 20-grain doses on account of tinnitus, and as she became noisy and delirious, with pulse running away and temperature 106·9, she was placed in a warm bath which was cooled by the addition of ice to 61° F. The immediate result of this was a rise in her temperature to 107, but after 32 minutes' immersion this fell to 103·5. She remained unconscious for several hours, but slowly improvement in her condition manifested itself, and after six weeks she was able to leave the hospital with, however, a somewhat damaged heart showing itself by slight mitral and tricuspid murmurs.

Dr. Monro also showed (*a*)—with Dr. Leonard Findlay—Preparations from a case of general tuberculosis with nodules in the medulla and cord. A nodule in the lumbar region had resulted in an extensive ascending degeneration. The significance of the changes resulting from the presence of a nodule which had destroyed the left olivary nucleus almost totally and the left pyramidal bundle slightly was commented on, the degeneration in the cerebello-olivary fibres being confined to the immediate circumference of the nodule. From this it would appear that the course of this bundle is from the cerebellum to the olivary nucleus and not *vice versâ*. (*b*) A kidney affected with chronic interstitial inflammatory changes from a subject who, it

Digitized by Google

was found, had only this one kidney and ureter. (*c*) A heart showing obstruction of the tricuspid orifice by a large globular thrombus from a case of endocarditis and gangrenous pneumonia. (*d*) Sections prepared by Dr. Mary B. Hannay from a case of acute myelitis to show the secondary degenerative phenomena.

The Annual General Meeting was held on 8th May 1908. Dr. Walker Downie, who enters on his second year of office, was in the chair.

The reports of the Treasurer and Secretary were presented and passed.

Drs. Robert Jardine and T. K. Monro were elected Vice-Presidents.

Additions were made to the council to fill the statutory vacancies in the various sections.

The Treasurer, Secretary and Editorial Secretary,—Drs. Alfred A. Young, Archibald Young and James Scott—were thanked for their services and unanimously re-elected.

The report of the committee appointed at the beginning of the session to revise the rules was submitted and considered in detail, and as this business was protracted, the meeting was adjourned to 22nd May. At the adjourned meeting the consideration of the rules was concluded, and the new rules were adopted. The chief alterations are concerned with the conduct of the public business of the meetings, and it is anticipated that the time limits adopted for communications and discussions will prevent the unnecessary congestion which has arisen during the past year or two. It has been decided to publish the Transactions yearly instead of at the end of every second year as formerly.

The Glasgow Northern Medical Society.

THE following gentlemen have been appointed office-bearers for the session 1908-09:—*President*, Dr. John G. Gray; *Vice-Presidents*, Dr. John Donald, Dr. A. N. M'Lellan; *Secretary*, Dr. A. T. Ballantyne *Reporting Secretary*, Dr. Scott Frew; *Treasurer*, Dr. T. B. Miller; *Seal-keeper*, Dr. W. S. Syme; *Auditors*, Dr. Hodge, Dr. Caskie.

Digitized by Google

Recent Literature.

CRITICAL SUMMARIES AND ABSTRACTS.

MEDICINE.

By JOHN D. COMRIE, M.A., B.Sc., M.B., F.R.C.P.

Some Morbid Urinary Conditions.

Oxaluria.—The question as to whether the appearance in deposits of the well-known crystals of calcium oxalate first described by Donné in 1839 is dependent merely upon changes of solvent power in the urine or is due to increase in amount of oxalic acid has been raised of late. Truelsen,[1] discussing the bearings of oxaluria in a recent paper, would raise this symptom to the position of a fairly definite disease. Although he admits that the small quantity of oxalate of lime passed upon a mixed diet is derived from vegetables, he denies the truth of the generally-accepted idea that oxalic acid may be an intermediate product of uric acid, and states that its appearance in pathological amount is due to its production by fermentative conditions within the alimentary canal. In this he is supported by the experimental work on dogs of Baldwin, who found its production could be brought about by inducing mucous gastritis with diminution of hydrochloric acid in the gastric juice. He agrees, too, with the former researches of Dunlop,[2] who found that a marked deposit of oxalates in the urine always indicates an actual increase in the total amount present as well as a diminished power of solution by the urine. Incidentally, he shows that the so-called "colloidal" or "dumb-bell" crystals of oxalate of lime consist in reality of carbonate of lime. The treatment of oxaluria and the other symptoms that accompany it is practically comprised in the administration of dilute nitro-hydrochloric acid once or twice after each meal.

Sago bodies appearing in the urine under certain conditions have been exhaustively investigated by De Santos Saxe.[3] These are derived from the vesiculæ seminales and consist of masses of globulin containing numbers of spermatozoa imbedded in them. Their presence is perfectly consistent with health, but in smears from them the presence of epithelium, leucocytes and bacteria indicates inflammation of the vesicles. Prostatic threads may be distinguished from these by being smaller, and less viscid than vesicular threads, and by containing prostatic epithelium.

Nephritis is the subject of an excellent article on pathology by

Digitized by Google

M'Farland,[4] who pleads for simplicity in nomenclature; for "while there are several well-defined types from the standpoint of the morbid anatomist they are rather rarely observed. The great majority of kidney lesions are mixed affections of the stroma and parenchyma."

Wilkins,[5] in a study of scarlatinal nephritis embracing 400 cases of the fever, found that the kidneys become affected in about 6 per cent. of all cases, half of these showing hæmaturia. He was unable to make any definite statement with regard to its causation, though he was unwilling to attribute it to chill seeing it was more common in cases confined to bed for long than in those allowed up as soon as the temperature had fallen to normal.

Johnston,[6] discussing the modern treatment of nephritis, recommends the restriction of the daily fluid to about 90 ounces. Of this he suggests that 5 or 6 ounces be given as normal saline solution by the mouth every three hours, except in cases where œdema is present. With regard to diet he recommends that it should be largely salt-free in cases of chronic nephritis, and when medicines are required he uses fresh infusion of digitalis or liquor ammonii acetatis.

Much attention has been directed of late to the danger of sodium chloride retention in nephritis, and in addition to œdema some writers have attributed to it many convulsive and dyspnœic attacks in uræmia (due no doubt to œdema of the brain). Gouget,[7] in a recent paper discussing the comparative values of the milk, the non-nitrogenous and the non-saline diets, gives an outline of the last mentioned, which may be quoted. The following are menus for different days of the week:—

1. Milk, 1000 grammes; potatoes, 300; two eggs; meat, 300; meal, 200; sugar, 50; butter, 40.

2. Unsalted bread, 200 grammes; meat, 200; vegetables, 250; butter, 50; sugar, 40.

3. Potatoes, 1000 grammes; raw, fat-free meat, 400; butter, 80; sugar, 100.

4. Potatoes, 1000 grammes; meat, 300; butter, 50; rice, 125.

5. Unsalted bread, 500 grammes; raw meat, 400; butter, 80; sugar, 100.

6. Unsalted bread, 200 grammes; potatoes, 700; butter, 50; milk cheese (prepared from a litre of milk).

7. Unsalted bread, 200 grammes; potatoes, 300; rice, 100; sugar, 100; butter, 25.

In a paper on "Kidney Insufficiency and the Treatment of Uræmia," Osborne[8] says that he certainly has seen "life prolonged in nephritis by feeding fresh kidneys;" but it is difficult to understand how this can be the case. Much more reasonable however appears a statement by

Digitized by Google

the same writer that "thyroid extract certainly aids in preventing convulsions in uræmia."

The results of the operation recommended by Edebohls for alleviation of the symptoms of chronic nephritis and attempted by some surgeons in the past few years were lately summed up by Martin,[9] to the effect that "decapsulation with the idea of establishing a permanent collateral circulation has been shown to be futile." The same writer, however, recommends simple nephrotomy as being often highly beneficial in pain or bleeding from the kidney.

In an important paper upon "The Eye and the Kidney" De Schweinitz[10] describes the types and frequency of retinitis which he has found associated with albuminuria, and he emphasises the fact, first noticed a number of years ago by Marcus Gunn, that lesions located in the blood-vessels, particularly various types of periarteritis and of "silver-wire arteries," producing compression upon under- and overlying veins, are often present for long periods before nephritis is manifest, or at least before other signs of renal disease, viz. albumin, casts and cardiac changes, are fully established.

Acetonuria has again been attracting considerable attention of late, particularly with reference to delayed chloroform poisoning, and to its occurrence in acute toxic conditions with high temperature. It is, as Monimart[11] points out in a paper dealing with its quantitative estimation by a new method, a constant excretory product of the lungs, skin and saliva, as well as a constituent of the urine. A marked increase of the quantity present in the urine is indicative of depraved katabolic processes, associated probably with defective oxygenation of fat. Those who regard acetone and its precursors in the blood as responsible for the serious symptoms, with which their presence in the urine in large quantity is associated, are likely in error, and exaggerate what is certainly a valuable diagnostic sign to the position of the toxic agent. The various conditions in which acetonuria occurs are well known, and have been recapitulated by Leonard Guthrie[12] and Langdon Brown[13] in recent papers. Of these, some of the most important are diabetes, fevers and septic conditions of various sorts, carcinoma, dilatation of the stomach and other affections of the digestive tube, during the puerperium, in some nervous diseases, after general anæsthesia, accompanying attacks of periodic vomiting, often with acute nephritis, and generally in cases of marked wasting and inanition. In any case, however, the treatment which has long been carried out when much acetone is present in diabetic coma, and which was emphasised by Beesly[14] in his valuable paper upon "Post-Anæsthetic Acetonuria," is indicated, viz. the administration of alkalies, both direct and indirect.

Glycosuria.—Stern[15] records a number of cases in which diabetes

Digitized by Google

was brought on by influenza, or in which attacks of influenza in successive winters called forth the presence of sugar in the urine of persons in whom the diabetes was at other times latent. This latent type of diabetes has also been noted in a paper by Lorand,[16] who recommends that physicians of life assurance companies should not be content merely with noting the absence of sugar from a sample of twenty-four hours' urine, but should examine it after a meal of meat and sweets. He considers that an anti-diabetic diet is necessary when the amount of sugar reaches 0·1 or 0·2 per cent., but he insists that patients do much better if from this diet carbohydrates be not rigidly excluded. To obtain variety he recommends moderate amounts of meat, green vegetables, eggs, kefyr or koumiss of the third day, sour cream, Graham bread, one or two oranges, and apples, peaches, or other fruits which contain very little glucose. The same writer mentions his experiments conducted jointly with Professor Minkowski to show the antagonism of the pancreas and thyroid gland. After the pancreas had been removed from some young dogs diabetes ensued, but upon subsequent removal also of the thyroid gland the glycosuria disappeared in two days. This is parallel to the observation by Von Noorden that in exophthalmic goitre there is an extraordinary tendency to alimentary glycosuria.

In the *St. Petersburger Medicinische Wochenschrift*, Teschemacher[17] strongly recommends the regimen and water of Neuenahr for the improvement of diabetes, and records numerous cases of its beneficial action.

REFERENCES.

1. Truelsen. *Bulletin of the Univ. of Nebraska.* October 1907.
2. Dunlop. *Laboratory Reports, R.C.P.E.* 1897.
3. De Santos Saxe. *New York Med. Journ.* November 23, 1907.
4. M'Farland. *Therapeutic Gazette.* November 15, 1907.
5. Wilkins. *Med. Chronicle.* October 1907.
6. Johnston. *Therapeutic Gazette.* November 15, 1907.
7. Gouget. *Gazette des Hôpitaux.* November 5, 1907.
8. Osborne. *Journ. Amer. Med. Ass.* August 1907.
9. Martin. *Therapeutic Gazette.* November 15, 1907.
10. De Schweinitz. *Ibidem.*
11. Monimart. *L'Echo Médical.* November 5, 1907.
12. Guthrie. *Clinical Journal.* June 12, 1907.
13. Langdon Brown. *Practitioner.* July 1907.
14. Beesly. *Brit. Med. Journ.* May 1906.
15. Stern. *American Medicine.* March 1908.
16. Lorand. *Glasgow Med. Journ.* May 1908.
17. Teschemacher. *St. Petersburger Med. Woch.* March 25, April 5, April 11, 1908.

Digitized by Google

SURGERY.

By LEWIS BEESLY, F.R.C.S.

IN a recent number of *Le Progrès Médical* Dr. H. Judet gives an account of what he terms "the shortened orthopedic method" of treating congenital dislocation of the hip. This method, according to him, has the advantage of being shorter, less troublesome and less uncertain than that of Lorenz, from which it is derived.

Dr. Judet's present article is merely concerned with the application of the treatment to the patient, the clinical and anatomical considerations which led him to adopt it having been described elsewhere.

He is of opinion that reduction may be performed with greatest advantage between the ages of 3 and 6, as before that age the plaster cases are apt to become polluted, and after 6 or 7 the reduction itself becomes more laborious. Attempts, however, may be legitimately made even at 12, although the facts do not warrant a confidence of complete success. It will be found useful in these cases to begin the treatment with a preliminary course of extension by a weight and pulley for a week or two which facilitates reduction afterwards.

Dr. Judet's method of reduction in easy cases requires the help of only a single assistant, whose duty consists in immobilising the pelvis of the patient by strongly flexing the sound thigh and knee on the abdomen. The operator himself grasps the diseased limb by the knee and foot, flexes the thigh forcibly on the abdomen, and then abducts and rotates it outwards. These movements are repeated with increasing force, the tense band of adductors gradually relaxes without the necessity of breaking it forcibly, and suddenly during a more energetic effort of abduction a peculiar clicking sound is heard and the head of the femur regains the acetabulum. This is demonstrated by the hard swelling which appears at the base of Scarpa's triangle.

In children over 6 years old reduction cannot be usually effected without employing the so-called *lever* process. The surgeon slips his forearm, to act as a fulcrum, under the thigh close to the great trochanter and then abducts the limb to the utmost. The short arm of the lever (the neck of the femur) is thus forced forwards and the head jumps the posterior brim of the acetabulum.

If this fails a second assistant must be employed and an effort made to reduce the dislocation by the process of *en adduction*, as follows:—The affected thigh is flexed to a right angle on the pelvis and is then dragged by the surgeon towards the median plane of the body (extension and adduction), while simultaneously the second

Digitized by Google

assistant vigorously thrusts the great trochanter forwards with his fingers.

Should this not succeed, the muscular obstruction from the adductors and posterior thigh muscles must be dealt with. The adductors must be gradually squeezed out and broken by the ulnar side of the hand making to and fro movements at the level of the pubis. By subjecting the thigh to flexion, adduction and external rotation, and then by gradually extending the leg on the flexed thigh, the posterior muscles of the thigh will become elongated. These proceedings cause no serious damage. The muscular resistance having been thus destroyed, the various manipulations of reduction can then be recommenced in the order already indicated.

It must not be considered that the surgical interference has been definitely frustrated if after all these efforts the only result is to bring the head of the femur nearer to the acetabulum; because if the posterior dislocation high up and movable has been altered into an anterior dislocation low down and fixed the child's walking will be considerably improved.

The application of the plaster case after reduction is of the utmost importance. The upper end of the thigh must be placed as much as possible in advance of the frontal plane of the body and the limb should form an angle of 40° or 50° with the horizontal plane on which the child is lying. It is only in this way that a second casing can be dispensed with.

The author figures a machine or rest which he has constructed to retain the child's body and lower limbs in their proper position while the plaster case which reaches to the ankle is being applied and is drying.

He advises that radiography should be employed to test the accuracy of the reduction, especially if any doubt remain in the surgeon's mind.

The ideal treatment is to cure with a single plaster case, which should remain in position for four and a half or five months. After removal the limb will take from three to six weeks to regain its straightness. Meanwhile massage should be employed, and as soon as the limb is straight walking exercises should be commenced.

This method succeeds well with children from 3 to 6 years of age in whom the adductors have not been broken. The muscular equilibrium of the hip not having been interfered with, the limb of itself resumes a correct attitude.

Dr. Judet advises the adoption of the first position of Lorenz when the adductors have been ruptured. After three months there is a second anæsthesia and the leg is slowly lowered and adjusted into a

Digitized by Google

second plaster case including the foot. This is continued for two months, during which the child can stand upright and take a few steps.

In double dislocations both limbs may with advantage be operated on at the same time unless clinical experience anticipates a very severe or prolonged operation with much shock.

The final treatment of teaching the child to walk afresh is very important and sometimes takes three or four months. It should be accompanied by massage, salt baths and electrotherapy. Older children occasionally take eight months to learn to walk, the stiffness of the hip being often obstinate.

OBSTETRICS.

By J. W. BALLANTYNE, M.D., F.R.C.P.,
Physician, Royal Maternity Hospital, Edinburgh.

Full-term Extra-uterine Pregnancy.—An ectopic gestation which goes to the full term is rare, but M. Potocki (*Ann. de Gynéc. et d'Obstét.*, 2d ser. vol. v., February 1908), in recording the termination of such a case with the infant still living, is dealing with a still rarer occurrence. The author has found seventy-five similar instances in obstetrical literature, but the patient, observed by himself, showed peculiar characters. She was pregnant for the first time, was twenty-three years old, and, according to her menstrual history, was nearly at the ninth month. At the end of the fourth month she had suffered from intense abdominal pain, which lasted for three days; it was thought that she was aborting or was suffering from peritonitis, but no hæmorrhage occurred, and she gradually recovered entirely. About a month later the pain returned, with vomiting and syncope, and after this the patient remained in bed at rest till the full term. The abdomen was markedly irregular in its enlargement; palpation revealed the fœtal parts, which were very easily felt, the head lying in the left flank, while a structure, believed to be the uterus, was on the right side. The fœtal heart was heard in the middle line above the level of the umbilicus. The diagnosis was made of extra-uterine pregnancy at the full term with a living infant, and it was determined to operate at once. The patient was chloroformed, and laparotomy was carried out. The amnion was found to be slightly adherent to the anterior abdominal wall. When the adhesions were separated the placenta could be seen in the lower part of the amniotic sac, with the fœtus lying above it; to the right side was the uterus, congested and somewhat large. An opening was made into the gesta-

Digitized by Google

tion sac as far as possible from the placenta and the fœtus was quickly extracted; it was alive and soon began to cry. On attempting to trace the connections of the placenta (which seemed to be separating of itself), Potocki was met by a terrific hæmorrhage which did not cease till he clamped the uterine and ovarian vessels. Since the wall of the sac consisted of the amnion alone, it could not be marsupialised, so the whole mass, with the placenta, was separated from its surroundings and removed. The uterus and the annexa of the left side were left *in situ*, and the wound was closed. The patient made a good recovery. The infant, a female, was healthy, and showed no deformity of either the limbs or the trunk; it measured 19 inches in length, and weighed 3130 grammes. The cranial vault, however, was relatively small, and at the age of two-and-a-half years the child appears to be a microcephalic idiot. This case presents several features of interest. There was, for instance, the complete absence of most of the classical symptoms of ectopic gestation, for there were no irregular hæmorrhages and no expulsion of a uterine cast. Then, again, the specimen, when examined after the operation, showed that the placenta was inserted upon the isthmus of the tube; yet the pregnancy went to full term. Again, the operator who had intended to marsupialise the gestation sac found himself unable to do so, for the placenta appeared, without any traction being made upon it, in the mouth of the sac, and could not be returned; but when he tried to take it away the hæmorrhage was at once so severe as to necessitate immediate clamping of the broad ligament on both sides of the sac.

Eclampsism.—Paul Bar (*Rev. Mens. de Gynéc., d'Obstét., et de Pediat.*, iii. p. 41, February 1908) proposes to give the name eclampsism to the group of signs and symptoms which indicate that an attack of eclampsia (convulsions) is imminent. These are a persistent decrease in the amount of urine passed, and a diminution in the percentage of chlorides contained in it with the development of slight or more marked œdema, If methylene blue be given to a patient with such symptoms, and if it appear late in the urine, and is eliminated irregularly during a period of two or three days, the diagnosis of a serious renal lesion may be regarded as established. Albuminuria is, of course, a well-known symptom, and its significance is increased if the albumen be associated with albumoses, with peptones, and with aceto-soluble albumen. Urobilinuria and slight jaundice are also diagnostic symptoms, pointing, as they do, to disturbed action of the liver. The signs and symptoms which have been named may exist for some time without convulsive seizures actually occurring; but if, in addition, there be arterial high tension, amblyopia, severe headache, epigastric pain, dyspnœa, ringing

Digitized by Google

in the ears, and sudden paralysis of groups of muscles, the supervention of eclamptic seizures is imminent. In a few cases eclampsism is present without eclampsia following it; or, rather, it is sometimes followed by a condition known as "eclampsia without convulsions," and this may prove fatal when the necropsy shows the same lesions as those which follow fatal cases of ordinary eclampsia. For example, a patient with eclampsism may pass into a state of coma without the occurrence of convulsions, or she may have very grave dyspnœa, or severe trigeminal neuralgia, or a hallucination. Bar regards these symptoms as equivalent to the more commonly observed convulsive seizures. As a general rule, if treatment is not immediately followed by the disappearance of the signs of toxæmia, the induction of labour is indicated, and it is specially to be advised in the irregular cases of eclampsia sine convulsionibus.

Hebotomy in a Breech Presentation.—R. H. Pomeroy (*Amer. J. Obstet.*, vol. lvii. p. 511, April 1908) puts on record a case in which hebotomy was performed for impaction of the breech. The patient was a woman seventeen years of age, in labour at full term. Pains had been going on for twelve hours, and the membranes had been ruptured for nine hours. The pains were now occurring every ten or fifteen minutes. The pelvis was contracted (justo-minor type), the diagonal conjugate measuring four inches. The cervix was thin and nearly obliterated. The scrotum and both feet were felt presenting at the level of the brim. No change occurred in two hours. Cæsarean section was considered, but rejected on account of the length of time which had elapsed since the rupture of the membranes, and for the comparatively small degree of contraction present. The patient was a Roman Catholic, so, to give the child a good chance of surviving, it was determined to perform hebotomy. The left pubic bone was divided by the Gigli saw, and the feet of the infant were then drawn down. The head required considerable suprapubic pressure for its expulsion, and the perineum was somewhat severely lacerated. The child was successfully resuscitated in a few minutes after its birth. The mother made a good recovery.

Causes of Abortion.—Romolo Costa (*Annali di Obstetricia e Ginecologia*, vol. i. for 1908, p. 181, February 1908) suggests that some otherwise inexplicable cases of the premature termination of pregnancy may be due to insufficient decidual reaction in the mucous membrane of the uterus. He cites a case in which a primipara (thirty-one years of age) aborted at the sixth month. All the ordinary causes of abortion could be excluded. The placenta weighed 400 grammes, and

Digitized by Google

showed no coagula indicating premature separation. The microscopic examination, however, showed that the villi lay close together, the intervillous spaces being distinctly smaller than normal. Between the villi islands of decidual tissue were only occasionally found. There were not the usual intimate relations between the maternal and fœtal tissues, and the villi themselves were thinner than is normal, and had an imperfect epithelial investment. The decidual layer also was of less thickness than usual. These changes point to an insufficient decidual reaction as the cause of the abortion; but the explanation of the defective decidual reaction has yet to be given.

DISEASES OF THE EAR, NOSE AND THROAT.

By HENRY PETERKIN, M.B., Aberdeen.

The Treatment of Acute Otitis Media by a Pneumococcus Vaccine.

Magruder and Webb (*Laryngoscope*, November 1907) report a case of acute otitis media treated by a pneumococcus vaccine.

The patient, a man aged 42, was seen by Magruder on 26th November 1906, on account of intense pain in the right ear of three days' duration. On examination of the ear the right membrana tympani was found to be inflamed and bulging. There was no evidence of mastoid affection. Paracentesis of the bulging membrane was advised by Magruder, but refused by the patient. Two days later a small postero-inferior perforation occurred allowing a free serous discharge which showed pneumococci in pure culture. The ear was then treated by the dry method for about a fortnight, when, the discharge becoming thicker and stringy, the perforation was enlarged and boracic acid irrigations and 20 per cent. argyrol installations were employed. This method of treatment had no appreciable effect upon the discharge, and various other remedies employed were equally without result. On 20th January 1907, seven weeks after the patient was first seen by Magruder, temporal headache was complained of. The discharge was again examined bacteriologically, and a pure culture of pneumococcus found. On 21st January and again on 24th January the opsonic index was estimated, and found on both occasions to be 0·7; on the latter day an injection of fourteen millions of pneumococci was made. During the next three days the discharge was greater. On 28th January it was much less and was mucoid in appearance. The opsonic index was found to be 1·1. A second injection of twenty million pneumococci was given on that day. On 30th January the ear was dry. Ten months later there had been no return of the discharge.

Digitized by Google

Deafness in the Course of Acute Osteo-Myelitis.

Siebenmann of Bâle (*Archives of Otology*, December 1907) reports three cases of deafness associated with osteo-myelitis, and refers to four others which he has found in literature. He thinks it possible to develop a general clinical picture of osteo-myelitic deafness.

The patients affected were mostly youthful. In six of the cases the ages of the patients ranged from seven to twenty-four years. In the seventh case the patient was middle-aged.

In all the cases there was an acute osteitis beginning with high fever and lasting months or years. In three of the cases there were multiple foci. In four cases there was only a single focus.

In all the cases the deafness was bilateral, and first made its appearance during the course of the bone suppuration. In six of the cases the deafness appeared simultaneously in both ears; in the seventh case, one of Siebenmann's, one ear was affected about three years after the other. In two cases an operation under general anæsthesia, in a third case meningeal disease, seemed to have been the exciting factor of the aural trouble. In the other four cases there was no obvious exciting agent.

The loss of hearing is very rapid, deafness sometimes occurring within a few hours. Four of the patients became totally deaf in both ears. In three cases total deafness remained in one ear, whilst there was partial hearing in the other. Two of the patients became deaf-mutes. Persistent subjective noises were observed in three cases, and in the same three cases vertigo was present but disappeared later in two of the cases. The static function was examined in Siebenmann's cases and was found to be preserved in proportion to the auditory function. In none of the cases was the middle ear affected.

Everything points to these cases of osteo-myelitic deafness being due to an infection of the internal ear, and Siebenmann thinks it probable that the condition begins as a labyrinthitis.

Lumbar Puncture in Meningitis.

Jakins (*Journal of Laryngology*, January 1908) reports a case of meningitis subsequent to mastoid operation for chronic discharge of the middle ear in a tuberculous subject, relieved and apparently cured by lumbar puncture.

The patient was a young man aged 19. He was admitted to hospital on 8th July 1907. He had had a discharge from his left ear for two years, and there was a sinus over the mastoid of a fortnight's standing. The mastoid was tender. The patient had had a mastoid

Digitized by Google

operation done sixteen years before. There was tuberculous disease of the left knee. There had been no sickness.

A radical operation done on 9th July revealed extensive caries of the antrum and attic. The lateral sinus and middle fossa of the skull were exposed. The day after operation there was a rise of temperature to 101·4° F., followed by a gradual fall until 21st July, when it again rose to 101·4° F., and on 23rd July to 102° F. On the latter date there was a rigor, the patient vomited and had constant headache. The lateral sinus was exposed but found to be healthy. Following the exposure of the sinus the temperature fell to 99·6° F., but two days later had risen to 102·4° F., and on 29th July to 103·2° F. On this date lumbar puncture was carried out and 15 c.c. of fluid were removed. The pressure was moderate.

The pathologist's report on the fluid withdrawn was to the effect that the fluid was slightly opalescent, that without centrifuging there were six polymorpho-nuclear leucocytes in each field, that after centrifuging there were twenty-eight polymorpho-nuclear leucocytes and two lymphocytes in each field, that no tubercle bacilli were found, that a large gram-staining diplococcus growing well on agar at 37° C. was found both intra-cellularly and extra-cellularly, and that the large number of leucocytes indicated an acute meningitis.

On the morning following the lumbar puncture the temperature was 100° F., and in the evening 97·2° F. On the 2nd August there was a rise of temperature to 102·8° F., falling in some hours to 99° F. From this time onward the patient made a satisfactory recovery, and on 28th October was in good health.

A Submucous Operation for the Reduction of Hypertrophied Turbinals.

Linhart (*Laryngoscope*, February 1908) describes an operation for the reduction of enlarged turbinals with preservation of all the mucous membrane. It is as follows:—After cleansing and cocainisation of the nose, a perpendicular incision a quarter of an inch in length is made through the mucous membrane just anterior to the enlarged portion of the turbinal. A special, long, slender, dull-pointed dissector with a slight curve at the end is introduced through the incision, and passed backwards close to the periosteum of the turbinal until it reaches the posterior end of the bone. A mark on the shank of the dissector gives an idea as to when this has been accomplished. This part of the operation may require a good deal of careful manipulation. Where the turbinal swelling is slight, scraping of the periosteum and gentle breaking down of some of the erectile tissue with the dissector

Digitized by Google

may be sufficient. Where, however, there is much distension of the venous sinuses these must be broken down. To accomplish this a hatchet-knife, an instrument with a short blade at right angles to the shank and with a dull cutting edge facing the handle, is passed along the track of the dissector, with its blade flat against the periosteum. The knife is then turned so that its blade will be towards the prominence of the turbinal, and then drawn forwards tearing the submucous tissue as it comes. Where there is much redundant tissue hanging down on the floor of the nose, a downward as well as an inward incision may be necessary. The blade is then turned towards the periosteum of the turbinal, and it is torn from behind forwards in similar fashion. The knife is then removed from the nose, and a tightly-fitting nasal splint is introduced to maintain the cut surface firmly opposed to the torn turbinal periosteum. This splint is kept in position for forty-eight hours. After completing the incisions adrenalin may be applied to the turbinal to cause increased shrinkage, and allow of a larger splint being used. Adrenalin should not be used during the operation itself as it causes too much shrinkage of the turbinal tissue, and thus does not allow of free use of the knife.

"The operation is intended particularly for those cases of simple intumescence, with vaso-motor paresis of the walls of the blood-vessels composing the erectile tissue, when the turbinal has become flabby from repeated attacks of rhinitis," but "very good results follow the operation on turbinals in which the tissue has been made dense and thickened by repeated inflammatory attacks." The advantages claimed for this operation are the shrinkage of the vascular tissue of the turbinals, giving rise to free nasal respiration, the obliteration of certain of the venous sinuses, the position of the base of the scar on the bone, the small risk of hæmorrhage or infection, the preservation of the mucous membrane and hence of the physiological function of the nose, and the small space of time required for healing.

Fatal Hæmorrhage from the Ear.—Two interesting cases of fatal hæmorrhage from the ear are published in recent issues of the *Archiv. für Ohrenheilkunde.*

The first is reported in Band 73 by De Forestier of Libau. A three-year-old boy was attacked one evening by a hæmorrhage from his right ear. It was of short duration, but recurred in spite of plugging of the auditory canal. He was seen on the next day by De Forestier, who obtained the following history :—For some days the boy had complained of headache. For ten days he had been feverish, and became gradually more apathetic. His ear had previously been healthy, and, indeed, this was the boy's first illness. On two occasions, one of them a month before, and the other three weeks before the bleeding, he had fallen.

Digitized by Google

An exact account of these falls was not obtainable, but on one of the occasions the fall had been from a high bed. No injury or symptom of illness was noticed after these falls. About the same time as the boy became feverish a swelling was noticed in the right side of the neck.

At the time De Forestier saw him the boy looked healthy enough. His temperature was however 38·5° C., and his pulse 140. On the right side of his neck below the mastoid process, and behind and in front of the sternomastoid, was a hard swelling about the size of a child's fist. The skin over it was not discoloured. There was no tenderness and no fluctuation. There was no evidence of trauma about the head. In the right auditory canal, which was very narrow, there was fresh blood which seemed to flow out slowly. The flow was checked by pressure on the carotid. No pus or evidence of inflammation to be seen. The blood seemed to come from the antero-superior margin of the otherwise healthy and intact drumhead. The left ear was normal. There was fresh blood in the pharynx, but none in the nose. No evidence of any cranial nerve disturbance.

The colour of the blood and the effect of the compression of the carotid showed that the bleeding was arterial, but it was impossible to determine its exact source. It was decided to ligature the carotid. During the transport to the hospital a violent bleeding took place. A tampon was washed out of the auditory canal. On arrival at the hospital the common carotid was ligatured. During the operation the swelling in the neck was found to be glandular. After ligature the bleeding at once ceased. The head was immobilised as well as possible, and for a time all looked well. Three hours after the operation, however, a tremendous hæmorrhage took place from the nose, mouth and ear, and the child died in a few minutes.

De Forestier's explanation of the case is that, as a result of one of the falls, the thin wall between the carotid canal and the tympanum had been splintered, and that, aided by the movements of the head and the pulsations of the vessel, one of the splinters had gradually sawn its way into the carotid.

The second case is reported in Band 74 by Uchermann of Christiania. A year-old girl was brought to hospital with the following history:—Eight days before, the child became ill, had trouble in swallowing, was feverish, and developed a swelling on the left side of the neck just under the ear. This swelling was thought by the doctor in attendance to be glandular. Four days later discharge began to flow from the left ear. On the morning of admission a plug of wool which had been in the ear was found on removal to be soaked with blood, and at the moment of its removal a sharp hæmorrhage took place.

Digitized by Google

Examination on admission on the 14th of February showed in the left auditory canal some blood which obscured the view of the drumhead. There was no swelling or tenderness over the mastoid or in the neck behind the lower jaw, but perhaps slight infiltration in the depths in the later situation. The temperature was normal. The child was somewhat pale. The auditory canal was plugged and a bandage applied.

On the forenoon of 16th February a severe bleeding occurred, but was controlled by the application of a fresh tampon. The same thing happened in the afternoon, and the temperature rose in the evening to 40·2° C. On the 18th February, in order to ascertain the site of the bleeding, chloroform was given, and a partial resection of the mastoid process undertaken. No pus or granulation was found. The antrum was normal. A Körner's plastic was done and the drumhead and inner portion of the auditory canal freely exposed. The blood appeared to come from the innermost part of the auditory canal below and in front, in close proximity to the drumhead. The flow was uniform but not violent. On the 22nd February another hæmorrhage took place, again controlled by tampon. On the morning of 27th February a severe hæmorrhage occurred, the child became collapsed, and died a few hours later. For a few days before death pleural symptoms were present.

On examination after death an opening was found in the angle between the anterior and inferior walls of the auditory canal just in front of the drumhead at the point where the bleeding showed itself. A probe could be passed inwards and forwards into a cavity, which was bounded externally by the sternomastoid. Pressure over the latter expelled some venous blood and pus. On opening this cavity a fissure 1 cm. long was found in its upper part. This opened into the internal jugular vein. It was situated about 2 cm. below the jugular bulb.

DISEASES OF CHILDREN.

By J. W. SIMPSON, M.D., F.R.C.P.,
Extra-Physician, Royal Hospital for Sick Children.

Infantile Scurvy.

Infantile scurvy is a comparatively rare condition, and, that being so, very frequently it is unrecognised. Heubner is responsible for the statement that "Fifty per cent. of the unrecognised cases of infantile scurvy seen in my consulation practice were already under the care of practitioners who were possessed of a literary knowledge of this disease."

Digitized by Google

This would seem to point to difficulty in diagnosis, and such, no doubt, is frequently the case.

Seldom is it that one sees the typical cases described in text-books with the spongy bleeding gums, progressive wasting, anæmia, pain on handling, swellings, and ecchymoses about the joints, &c.

Much more frequently the diagnosis rests on one or two symptoms, and these, taken along with the history of the feeding (usually some proprietary food), gives one a clue to the actual condition.

Hamilton (*Montreal Medical Journal*, February 1908) draws attention to the frequency of the eye symptoms dominating the picture, and being the reason for which advice is sought. Two cases which he saw recently exemplifies this point. Both had been first sent to the eye department; they were, however, considered medical cases, and sent on to him.

In Case No. I. the history given by the mother was that the first thing she noticed was protrusion of the left eyeball, with discolouration of the upper lid.

Further examination by Dr. Hamilton revealed slight swellings about the ankles and thighs, and blood in the urine. The child had been fed on a variety of proprietary foods.

In Case II. much the same history was given; the feeding had also been by proprietary foods.

Examination revealed anæmia and slight swelling over one thigh. This was rather a doubtful case, scurvy being the most probable condition. The diagnosis was, however, confirmed.

An antiscorbutic diet acted in quite a magical way; the swelling disappeared, the face regained its normal appearance, and in four or five days the swelling had disappeared from the thigh, and manipulation of the limb was free and painless.

Two or three months ago a case very similar to the two above mentioned came under the care of John Thomson at the Sick Children's Hospital here. The child had rather a remarkable appearance, both upper eyelids were discoloured and intensely swollen. The case had been regarded as a hæmorrhage of the eyelids, produced probably by the strain of coughing in whooping-cough. The child was well nourished, but the mother complained that it cried and was fretful on the slightest movement.

The child had been brought up on a patent food.

Further examination revealed blood in the urine. The case was diagnosed as one of scurvy, and the result of treatment bore this out, all the symptoms and signs disappearing very quickly under an antiscorbutic *régime*.

Heubner also records cases in which the "eye" symptoms were the most prominent condition. In one of these cases, however, he pointed

Digitized by Google

out a condition which he believed to be pathognomic, and though he had met it in the most varied cases of other painful diseases, such as abscess, osteo-myelitis, and joint tuberculosis, he had never found it so pronounced as in infantile scurvy. In this child the region of both knee-joints was swollen from a thickening of the femoral epiphysis, and the slightest pressure on this swelling set up a thoroughly characteristic reflex phenomenon, the child jerking both arms into the air, with a piteous cry.

In regard to the diagnosis of scurvy, the question of the kind of food given is of the first importance, also the fact that scurvy is practically unknown before the fifth month. Perhaps the most constant symptom is pain on movement, and the next is probably hæmaturia, which Dr. Gee pointed out some years ago was present in a large proportion of his cases. In a group of thirty-four cases reported by Still, 60 per cent. had blood in the urine.

Hamilton, in his closing remarks on the diagnosis of this condition, says "that the anæmia, the restlessness or fretfulness when handled, the presence of blood in the urine, and sometimes unaccountable blood in the motions, when taken together or singly, should lead one to look carefully to the food the child is taking, and such signs should make one suspicious of early scurvy. The individual resistance may in part explain the fact that such cases do not become pronounced, while at the same time it is not unlikely that the food is changed as the child grows older in time to prevent the development of the marked clinical features of the disease."

On the Frequency of Tuberculosis, and the Two Chief Times of Infection during Infancy.

Selbach of Breslau writes an interesting article on this subject. His results are taken from 1157 cases dying during the first year of life. Out of this number ninety, or 7·8 per cent., died from tuberculosis.

Other observers record very much the same percentage of tuberculosis in infants under one year, except Hamburger, whose percentage is much higher.

	P.M.	Tuberculosis.	Per Cent.
Stirnimann . .	591	42	7·1
Binswanger . .	532	36	6·8
Hamburger . .	318	49	15·4
Durchschmitt . .	2598	217	8·4

Selbach next took up the question of the time of greatest infection, and he finds there is a steady rise up to the seventh or eighth month,

Digitized by Google

then a fall in the later months of the first year, and a rise again at the beginning of the second year.

For an explanation of this "rising and falling" in the incidence of tuberculosis, we must consider to a certain extent the pathology of tuberculosis in infancy. It is well known that tuberculosis in infancy is of a very special character.

1st. There is a great tendency for the tuberculosis to be diffused widely over the body—miliary tuberculosis.

2nd. Incomparably more important, however, is the fact that the infant's system has little capacity for destroying a focus of tuberculosis when once present.

It cannot, however, be said that there is no capacity on the part of the infant to the "incapsulation" of tuberculosis. The most recent investigators have shown that you may get a circumscribed focus as early as the third month. Selbach, in his own sections, twice in the fifth and once in the seventh month, saw tuberculosis well localised to one lobe of the lung.

In other two cases in the ninth month he saw, in addition to glands, the lungs only affected.

In one case, at the eleventh month, he noted partly old tubercle, and in a sixteen-month-old case a necrolic isolated focus in the lung.

Calcification showed itself from the second year onward. This was seen especially in the glands, but also in the lung. Besides these "cured" foci, fresh foci were also present.

From his experience of such cases he says that if you find tuberculosis in an infant it will sooner or later cause its death, owing to the destructive power of tubercle being so enormous compared with the power of resistance.

The probable period of infection was usually two or three months before death. If infection takes place during the first month the child is almost certain to die before the third month. After the fourth month the fatal period is distinctly longer.

From his observations he drew the following conclusions:—

1. Frequency of tuberculosis does not increase as formerly supposed from month to month, but towards the end of first and second year there is found a diminution in the number of cases.

2. Corresponding to these periods of diminution there are two periods where there is a well-marked rise, showing periods of marked infection.

3. *a.* The "cradle" infection in the first three months;

b. The "creeping" infection about the turning of the first year.

Of course there are possibilities of infection at other times.

4. Speaking generally, artificially-fed children succumb more

Digitized by Google

quickly to tuberculosis, next those partly on the breast and partly on the bottle, and, lastly, those entirely breast-fed.

5. These results show the great protective power of the mother's milk (fat).

Congenital Syphilis.

R. Clement Lucas, in the January number of the *British Journal of Children's Diseases*, discusses several important points in connection with this disease.

It is now generally accepted that the cause of syphilis, whether inherited or acquired, is due to the presence in the blood and tissues of the spirochæta pallida. The spirochæta pallida is a protozoon of spiral form, very mobile, and in size about half to three times the diameter of a blood corpuscle.

As to the question of infection, formerly it was believed that this might take place through the father alone, but Lucas controverts this, and puts forward this argument:—"How is it possible that a spirochæta, which is highly mobile, and whose length averages rather more than the diameter of a blood corpuscle, can penetrate an ovum $\frac{1}{200}$ of an inch in diameter, and multiply without destroying it." He therefore lays down as an axiom that inheritance is invariably through the syphilised mother. His argument, he also asserts, is supported by Colles's law, which is "that a woman giving birth to a syphilitic infant cannot be inoculated with syphilis by the infant when she is suckling it." In other words, though the mother may have shown no definite signs of syphilis, she is immune; whereas the syphilitic infant put to the breast of a healthy woman may inoculate her nipple and convey syphilis to her.

He believes that premature births, miscarriages, macerated fœtuses occurring in syphilis are due to the virulence of the infection, the spirochæta in these cases penetrating the chorion or placenta, and giving rise to the conditions mentioned. When, however, the virus is attenuated by time or treatment, the placenta forms a complete protection to the developing fœtus, and it is the separation of the placenta at birth which allows the infection to take place through the umbilical vein. Hence the regularity of the secondary exanthematous stage from a fortnight to three months after birth. In these cases the separation of the placenta is the first stage, and corresponds to the chance of acquired syphilis.

He next discusses the question of "Transmission of the disease by milk." As long ago as the seventeenth century Ambrose Paré observed that "infants suckled by syphilitic nurses are infected by them, seeing that the milk is nothing but whitened blood, which, being

Digitized by Google

infected by the virus, the child fed with it imbibes the same qualities." This view of a child being infected through the milk of a syphilised mother has been generally accepted, from a remarkable case which Clement Lucas had recently, in which a mother became inoculated with syphilis after the birth of her child; and although she suffered from severe secondaries, sore throat, condytomata, loss of hair, &c., she continued to suckle her child, which, however, continued healthy and well, without any appearance of syphilis. The conclusion which he drew from this case was, "that the milk of a syphilised person does not affect the suckling when that milk is being transmitted through the alimentary canal. If the poison is actually contained in the milk it would appear to be not transfusible through mucous membrane, since though it might be destroyed by the gastric juice, it is scarcely likely that any secretion in the mouth, even if in sufficient quantity, would be energetic enough to cause its disintegration or destruction. On the question of infant mortality he remarks that there is probably no disease more responsible for such an enormous destruction of human life as that caused by syphilitic parentage. His experience points, however, to the mortality being greatest in those families where both parents have suffered from chancre syphilis and obvious secondaries. The severity of the infection and ineffective treatment, or lack of treatment, are the two factors which determine the mortality.

DERMATOLOGY.

By F. GARDINER, M.D., F.R.C.S.,
Assistant Physician for Diseases of the Skin, Royal Infirmary, Edinburgh.

RÖNTGEN THERAPEUTICS as applied to dermatology has advanced very much, and more accurate information is now obtainable as to the rationale and method of use. Beaujard (*Le Progrès Médical*, 15th February 1908) defines their action as follows:—"cellular, destructive, and more than this, electively destructive." The more highly differentiated cells are more vulnerable—*cf.* young cells, lymphoid tissue and structures in a state of karyokinesis, such as seminal epithelium. Pathological cells are young and are undergoing karyokinesis, and are therefore readily affected.

In the skin the most active parts are the hair follicles and the malpighian layers, consequently the first explains the depilatory action in ringworm, and the second indicates the use in chronic eczema and localised patches of psoriasis.

Dean Butcher (*Proc. Royal Society of Medicine*, November 1907)

Digitized by Google

thinks that the trend of modern opinion is in the direction of giving smaller doses, and, quoting Rieder to that effect, he concludes: "I myself have insisted again and again on the efficacy of small doses, and shown that there is hardly any of these affections, be it chronic eczema or acne, psoriasis or sycosis, which is not benefited by small doses of Röntgen rays." Any visible and intense reaction is also to be, and will by the above method be, avoided.

The action of these rays in cleansing a foul varicose ulcer is, in his opinion, proof that they are bactericidal *in vivo*, whatever they may be *in vitro*, to a culture plate.

Dealing with ringworm he is very guarded: "It may indeed be doubted if Sabourand's epilation method is the last word to be said in the treatment of ringworm. Parents and practitioners alike are somewhat chary of subjecting very young infants to so potent and powerful an agent, the action of which is so obscure, and the ill effects of which are so occult and so long delayed. In the future I believe that epilation will be reserved for older children or for inveterate cases only."

We certainly agree as regards the infants, both on account of the thinness of the skull and also because it is so difficult to keep them still. That the rays are potent in their effects on the brain is probable, judging from the favourable results of the X-ray treatment of epilepsy, but is it not the diseased tissues which are there alone affected?—the mentality of the patient is improved. Dean Butcher's cautious statements are certainly preferable to those of Beaujard, who, in the conclusion of his article already referred to, speaks optimistically about apparatus being now perfected and finality being reached as regards dosage and methods.

That dosage cannot be accurately measured is evidenced by the many forms of quantimeters being devised. Among the most recent is that of Howard Pirie (*Proc. Royal Society of Medicine*, April 1908). This apparatus is an electrolytic one, shaped somewhat like a thermometer with the bulb containing water and two electrodes, in series with the X-ray tube.

The quantity of gas is in proportion to the amount of current passing through the X-ray tube in a given time, and it is indicated by the raising of a drop of water left purposely in the vertical limb. The instrument is graduated, but the indications are liable to error from the platinum of the electrode absorbing gas, and the author also states that in tubes with over six inches of spark gap the results are not satisfactory.

Whitfield (*Royal Society of Medicine*, March 1908) has applied a felt want in a cheap pliable X-ray shield. This is made of plasticine, into which is incorporated barium sulphate, and if used ¼-inch thick it is

Digitized by Google

quite opaque to the rays. To avoid cracking he recommends that it be rolled out thin between two layers of grease proof paper, and if the head is sticky it should be dusted over with boracic acid previously.

Fulguration.—Finley Cook (*Med. Record*, 21st December 1907) describes favourable results obtained by sparking morbid growths with a high-frequency current discharged from an insulated metal wire. "It differs," he states, "from the electrolytic action of galvanism in that it is more powerful, more rapid, and affects a much wider area of tissue; it also appears to have a peculiar selective action on morbid cells or cells of lowered vitality, as well as a stimulating action on healthy cells."

The method he considers applicable only to surface growths such as he admits could be removed also by X-rays. Acne, acne-rosacea, papilloma, moles and other skin conditions associated with hyperplasia have been so treated. "In the treatment of simple acne, where each individual lesion receives a separate charge, it seems possible to accomplish as much in a few minutes' treatment as would require as many days or weeks by any other method. The papules shrivel, the contents of the sebaceous glands escape and desquamation is rapid, *leaving no scars.*"

Cicatrices and sinuses yield more rapidly, in his opinion, to this method than to X-rays.

Amongst the cases quoted is one of acne-rosacea of eleven years' standing in which the nose was of "immense size" and markedly nodulated. "The patient had been under the care of several specialists and had apparently received every treatment usually employed for this affection, including the X-ray, galvanic needle and scarification. Multiple discharges were made over the entire nose, during which process large cavities containing sebaceous material were opened and shrivelled, leaving a thick layer of necrosed tissue surrounded by an active area of hyperæmia. Subsequently the necrosed area dried, shrank and assumed a blackish hue. Six days later it began to loosen, and was readily removed *en masse* without any sloughing." The epidermis grew on within ten days, and the result is described as highly gratifying.

The treatment is generally painless, but in very sensitive patients it was preceded by the application of cocaine, hypodermically or otherwise.

Incidentally it may be mentioned that enlarged tonsils and hæmorrhoids were treated similarly.

Revière (*Gaz. des Hôpitaux*, 14th November 1907) maintains that treatment by high-frequency sparking is quite sufficient for the cure

Digitized by Google

of superficial epitheliomas, and suggests that even the curette may favour re-infection by opening the lymphatic vessels. Metal electrodes are preferred by him, as the ebonite electrode carries materials damaging to the cicatrix. Since 1900 he has used short sparks, but more recently he has used higher voltages and sparks and effleuves of 20 to 40 centimetres in length.

The rationale of the process is that the diseased cells are weaker and unaffected by the healthy vascular and nervous systems, therefore more easily destroyed by this agency. He lays emphasis on having an apparatus fully equipped, so that variations in the length and strength of the spark may be obtained.

Iontherapy.—Lewis Jones, discussing "Ionic Medication" (*Royal Society of Medicine*, March 1908), mentions that some chemical bodies act powerfully on protoplasm in their normal condition, but not in their ionic form.

Chlorine is oxidising and destructive, but when used in cataphoresis its ions have no such effect. Iodine and various chemicals, whose action depends on their degree of concentration, behave similarly. In brief, a body to be active as ion must be potent, irrespective of its dilution.

Naturally it is important to know which pole to apply, and this is easily ascertained. Alkalis, alkaloids and metals are used with the positive pole, whilst acids, chlorine, bromine and iodine come off at the negative pole. Generally a 1 or 2 per cent. solution is sufficiently strong, the weaker being used if the electrode is of the same metal whose salt is ionised. A current strength of 3 ma. per sq. cm. is common.

The treatment is painful, the pain varying with the patient and the strength of the current, and this may be alleviated by previously introducing cocaine, and also by using ammonium chloride instead of common salt solution, as the moistening agent at the electrode is not therapeutically active.

The difference between this action and that of hypodermics is that while the latter is rapidly carried into the general circulation the former penetrates into the very protoplasm of the cells and its effects are more lasting.

Leduc used zinc ions in *rodent ulcer* successfully as far back as 1903, and many recent cases of success have been reported. It is not uniformly successful, but practically so in the early stages.

A case of diphtheritic paronychia was treated satisfactorily by Lewis Jones, who used copper ions.

Warts he removes by means of magnesium ions.

Ringworm of the scalp has not yielded favourable results, as

Digitized by Google

occasional hairs are apt to escape and this vitiates the whole. He has experimented with copper, and suggests the use of salicylate of soda, as the salicylic ions probably penetrate more deeply into the hair follicles.

Hartigan (*Royal Society of Medicine*, March 1908), experimenting with copper and zinc ions in five cases of circumscribed telangiectatic lupus erythematosus, reports promising results. Short exposures were given, and in some benefit followed the first application.

New Books and New Editions.

Alembic Club Reprints, No. 17. Medico-Physical Works. Being a Translation of Tractatus Quinque Medico-Phisici. By JOHN MAYOW, LL.D., M.D. (1674). Pp. 331. Edinburgh: Published by the Alembic Club. Edinburgh Agent: James Thin, 54 and 55 South Bridge. London Agents: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1907.

THIS not bulky book we welcome very heartily, and congratulate the translators of Mayow's "Tractatus Quinque Medico-Phisici" on having produced so readable an English version of one of England's greatest medical classics.

The well-known portrait of young Mayow, for he died in his thirty-sixth year, adds greatly to the value of the volume, which is still further enhanced by admirable reproductions of the original woodcuts in six plates. In their original Latin Mayow's writings could be known only to those few interested in the history of physiological discovery who also had the leisure necessary to the consulting of them. Even now, though pleasingly translated, they are in places difficult of apprehension owing to the enormous difference between Mayow's time and ours in respect both of chemical conceptions and chemical terminology. It is not too much to say that the Oxford doctor's account of the respiration published in 1668, when he was only 25 years old, remained the most valuable contribution to the physiology of that subject, prior to the discovery of oxygen.

As the late Sir Michael Foster said, Mayow's account of the physics of respiration is quite as good as Borelli's; while we may say that as to its chemistry nothing was virtually added till the time of Black and Lavoisier.

We have but to read "oxygen" for "intro-æreal particles" in order to see that Mayow had grasped all the essential features common

Digitized by Google

to combustion and to respiration. To the physiologist this tract on the respiration is the most interesting: here the chemist, anatomist, physiologist and physician all meet.

The actions of diaphragm and intercostal muscles both in natural and artificial respiration are carefully discussed, the conditions governing the entrance of air into the bronchi are expounded, Boyle being here quoted, and our author is not above endeavouring to explain such things as laughing, asthma and "hiccup" in the light of his researches. Mayow knew well, and knew as few of his contemporaries did, that all life needed air—that air was absolutely necessary to plants, insects, frogs and mammals alike.

More than that, Mayow knew that all plants had a respiration, and that, in modern phrase, the animal tissues had an internal respiration.

A very superficial glance at the book before us suffices to impress on us how much Mayow learned from "vivisections"—how little he would have known without them. Cardiac action, the blood in asphyxia, muscular contraction and much more he studied at first hand. As to the last named it is interesting to note he writes in 1674, just three years before Glisson's doctrine of muscular irritability came out. He sees that "intro-æreal particles" are necessary for muscular contraction, but he does not go so far as his Cambridge brother doctor in enquiring in virtue of what property muscular substance is capable of contracting. Those versed in the history of chemical theory now admit that Mayow was far beyond his day as regards what we now called oxidations, both in inorganic and in living matter. He was leading straight to a brighter vision in things chemical and vital, when Stahl, inventing "phlogiston," plunged chemical Europe into the dark, where it remained for a hundred years.

This little treatise also shews us what kind of a physician Mayow was. He, like Glisson, wrote on rickets: we have a large number of his prescriptions for divers diseases.

Mayow was by no means unacquainted with the work of his predecessors and contemporaries; more than once he quotes Descartes, Harvey, Highmore, Fabricius, Lower, Malpighi, Regner de Graaf, Steno, and Willis, besides the much less known Everard, Millington, Needham and Thurston.

In what connections he cites these men of his day and wherein he agreed with them and wherein he disagreed with them, and many other matters of deep interest, the reader will find for himself in this first complete version in modern English of the "opera omnia" of John Mayow.

Digitized by Google

A Text-Book of Treatment. Edited by R. J. FERGUSON, M.D., F.R.C.S.Eng. Part I. **Obstetrics and Gynæcology.** By JOHN CAMPBELL, M.A., M.D., F.R.C.S.Eng. Pp. 279. With 93 Illustrations. London: Sidney Appleton. 1908. Price 16s. nett.

IN the preface the editor states that, to suit the busy practitioner, the contents have been arranged in alphabetical order, yet, on reading the book, the contents scarcely seem to have been selected to suit this class of reader. The book contains detailed information on a variety of subjects, from the arrangement of a specialist's consulting-rooms to the technique of major operations, *e.g.* abdominal hysterectomy for cancer, which can only be performed by an expert gynæcologist. In our opinion such a work as the present should have no place in the specialist's library. A specialist concentrates his attention on a relatively limited field in order that he may keep himself abreast of all the latest advances in that particular department, and so be able to give to those who consult him the benefit of an extensive and detailed knowledge of his special subject. In its present form one might fairly call Mr. Campbell's book a "specialist's cram-book." It has the same relation to general, obstetrical and gynæcological literature which an cram-book bears to the student's orthodox text-books. The book contains much information of value to the general practitioner, but, for his particular purposes, it might be, with advantage, cut down to half its present size by the elimination of matter totally outside his sphere. There are numerous illustrations, several of which are reproduced from the works of Pryor, Kelly and Williams.

A Chronology of Medical History. By JAMES YOUNG, M.D. Pp. 91. Bristol: Edward Everard.

THIS neatly-bound and clearly-printed little book gives, in order of date, the chief men who have been distinguished in the field of medicine, together with the most notable steps in the development of the healing art; while an index enables the reader at once to find any name desired.

Into eighty-six pages has been compressed a wonderful amount that is entertaining as well as instructive. Under each name appears enough to characterise the man and to summarise his work, and, although in a future edition the details might here and there be supplemented, the short biographies are in general most judiciously written, and admirably suited for conveying a distinct impression

Digitized by Google

upon rapid reference, and for indicating where fuller information may be sought.

The period covered ranges from Sekhet'enanch in 3500 B.C. to the close of the Victorian era, and although some noted names have been omitted, *e.g.* those of Aretæus and Sir Thomas Browne, while occasional irritating typographical errors are found, the list has been most carefully and laboriously prepared.

We notice that in Homer "for the first time we read of venesection, for we are told that bleeding was practised by Polidarius upon the daughter of the King of Caria." Heroic is the proper epithet for the dose of his famous powder, prescribed by "Captain Thomas Dover, M.B., physician, pirate, quicksilver doctor, inventor of 'Dover's powder,' and discoverer of Robinson Crusoe," of which the author quotes "from 46 to 60 or 70 grains in a glass of white wine posset going to bed." Surely the exhibition of the powder was made in his capacity of pirate rather than physician! We learn that Claude Bernard was originally a poet; that Baron Larrey introduced plaster of Paris into surgical treatment; that Ambroise Paré, born 1517, was the first to abandon the application of boiling oil after amputation; that Hermann Boerhaave, born 1668, "became perhaps the most famous physician of his own or any other century;" and many similar interesting facts.

The book may be commended to medical men interested in the traditions and progress of their profession as a short history of medicine, the most compact and ready of reference that we have seen.

Precious Stones for Curative Wear, and other Remedial Uses, likewise the Nobler Metals. By W. T. FERNIE, M.D. Pp. 486. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1907. Price 6s.

THIS work has certainly entailed a very large amount of literary labour, for numberless sources have been ransacked to yield up their riches in folk-lore as to the precious stones and certain metals.

The medical aspect of the book is peculiar; while the hoariest superstitions are quoted with evident belief that they embody truths, attempts are made to justify them by appealing to certain supposed analogies in the medicinal and curative effects of radium and other radio-active substances.

The numbers of well authenticated cures through the agency of radio-activity are extremely few, and the few cases that exist may quite possibly be cases of "*post hoc sed non propter hoc.*"

Digitized by Google

The book is such a medley of facts, beliefs, and ancient and modern superstitions, that it is difficult to decide whether it is a scientific treatise or not. As a popular exposition of a vast but little-known region, it is a work of value and importance; but that does not make it scientific. The spirit of it is entirely uncritical; albeit it is a veritable store-house of recondite lore as to the alleged influence of gems, &c., on living beings.

The fact that some well-known actress or beautiful titled lady wears a ring or a necklace with stones of a particular colour and value may be interesting, but it *proves nothing* as regards the causal connection between gems and the health, temperament, or "luck" of the ladies above mentioned. The book is almost pure mysticism in modern language, it is not medical science. There seems a confusion between the known action of salts of certain metals taken into the body, and the alleged or postulated action of these same metals in rings, belts or plates worn outside the body. Certainly we know of old women of both sexes who wear iron rings under the impression that rheumatism or gout is thereby alleviated, but no doctor of medicine to-day can justify these beliefs save as coming within the sphere of "faith healing." As well might we advise people to hang horse-shoes on their front doors "to keep away the fairies." It is quite true that lights of different colours have an effect on the metabolism of both sane and insane people, and on animals, but that does not make it any the more probable that red stones, or blue stones, or purple stones have similar or even any analogous effects. We know of no authority for writing Jerome Cardanus, Cardamus. References to the original papers of all the scientific workers quoted should have been given.

Cancer: Relief of Pain and Possible Cure. By SKENE KEITH, M.B., F.R.C.S.Ed., and GEORGE E. KEITH, M.B., C.M. Pp. 155. London: Adam & Charles Black.

To write a book on the cure of cancer requires modesty and reticence on the part of the author lest he lay himself open to the charge of self-advertisement. The authors of this little book are modest in their title-page and reticent in their assertions. It purports to give the result—or rather the effects of such results on their own minds—of experiments conducted on certain lines on cases of carcinoma and sarcoma. Some of the cases had been operated on, and unsuccessfully, as the disease had recurred. In some the diagnosis seems to have been very perplexing and doubtful. Forty cases are recorded at considerable length; in some the temporary improvement under the

Digitized by Google

treatment seems to be remarkable, but in nearly all the inevitable issue is arrived at.

The authors state quite frankly the fallacies and errors that are sure to occur in any such experimental treatment of cancer, and have before them the numerous "cancer cures" which have been placed before the profession with varying amounts of confidence by their authors. Well do we know the dark roll of cocksureness—trypsin, yeast, pyoktannin, violet leaves *et hoc genus omne*. Radium and the X-rays are having or have had their day. Our authors begin their methods with common sense; rest of body and mind, regulated diet, encouragement to hope do good in every case. The special treatment partakes a little of the shot-gun method—a combination of arsenic and iodipin, cacodylate of iron, and cinnimate of sodium, made into an emulsion, and injected by a serum syringe with sharp needles slowly, in varying amount and frequency, as each case requires.

It is evident that there are many cases in which the diagnosis is doubtful that may be cured or helped to recover by such an active and catholic prescription. The reviewer has had special opportunities of trying every possible treatment in numerous cases of hopeless cancer. In his experience all are improved and cheered by any treatment. Many gain weight for a time under all methods; some soon prove to be useless, some dangerous, but sooner or later death ends the cases in which the diagnosis was correct. Syphilis gets cured or recovers. Tubercular masses seem to improve, and do diminish in size, but are identified on the post-mortem table.

Fain would we hope better things. The descendants of Thomas Keith have a hereditary right to help suffering humanity. They have told their story modestly, and not as quacks do. We hope their treatment may meet at the hands of the profession with a full and fair trial. There are some excellent remarks on the extraordinary variety in the progress of different cases of scirrhus cancer of the breast. "In the case of a fresh-complexioned young woman of thirty the disease will kill within a year or eighteen months; while an apparently similar amount of disease may be discovered in a lady of seventy, and if left alone will do no harm, though the pathological report of both cases would be scirrhus cancer" (p. 4).

First Aid to the Injured and Sick. By WARWICK and TUNSTALL. 5th Edition, revised and enlarged. Pp. 252. Bristol: J. Wright & Co.; London: Simpkin, Marshall & Co. 1908. Price 1s. paper; 2s. 6d. cloth.

THIS is an excellent and well-written handbook on ambulance work, and should be of great service to lecturers on that subject

Digitized by Google

There is a tendency to err on the side of being too elaborate, especially in the chapters on Anatomy and Physiology, though the present trend of ambulance competitions is towards a fairly minute knowledge of these subjects, especially from advanced pupils.

It is difficult to see the necessity of describing five different methods of artificial respiration: and more importance might have been attached to Professor Schäfer's method, which is the simplest and probably the most efficacious of them all.

Otherwise the book is one of the most readable and interesting on the subject: the illustrations are excellent; and the section on transport of the injured is one of the best in the book. It can be thoroughly recommended to those in search of a new book on First Aid.

Atlas and Text-Book of Human Anatomy. By Dr. J. SOBOTTA. Edited with Additions by J. P. M'MURRICH. Vol. III. Philadelphia and London: W. B. Saunders Co. 1907.

THIS, which is the third and final part of the atlas prepared by Sobotta and edited in English by M'Murrich, contains the illustrations of the vascular system, the central and peripheral nervous system, and the sense organs.

In the general features of its text and illustrations it resembles the earlier parts, which have already been noticed.

In the present part the peripheral blood-vessels and nerves are shown in the same illustrations with the muscles, &c., so that these illustrations represent dissections of the various regions. This arrangement has obvious advantages and works out well in practice.

The illustrations have been carefully and accurately drawn, and they have been beautifully reproduced in half tones.

The result, however, is that many of them give the impression of casts rather than of actual dissections, and lack the life-like appearance of other methods of illustration.

The text has been fully and accurately written, and is full enough to form a text-book of anatomy for the average reader.

This part completes an atlas which has many good points to recommend it, while it lacks the artistic and realistic character of other similar works.

Anatomy of the Brain and Spinal Cord, with Special Reference to Mechanism and Function. By HARRIS E. SANTEE, M.D., Ph.D. Fourth Edition. Revised and Enlarged. Pp. 453. London: Sidney Appleton. 1908. Price 16s.

IN recent years considerable advances have been made in our knowledge of the anatomy of the central nervous system, especially in the

Digitized by Google

association of types of histological structure of different parts of the cortex with the arrangement of the convolutions and with physiological function. The results obtained by the investigators along these lines have been incorporated in this edition of Dr. Santee's text-book, Campbell's work particularly being recognised and included.

The impression which a perusal of the book conveys is that the information is not yet thoroughly digested, and therefore the text is rather diffuse; but, from the amount of information which it contains, the book is a useful one. The illustrations are of very unequal merit, those which represent the naked-eye anatomy of the brain being frequently unsatisfactory.

The book does not contain any original matter, but is a compendium of the views of a number of different observers whose work is fully recognised throughout, and hence it will prove useful to those who wish to have a ready means of access to the leading views which are held upon the complex structure and function of the various portions of the central nervous system.

Squint and Ocular Paralysis. By E. LUCAS HUGHES, M.R.C.S.(Eng.). Pp. 206. London: H. K. Lewis. 1907. Price 6s. 6d. nett.

DURING the past three years various monographs from the pens of young ophthalmic surgeons have appeared, and this is the latest arrival.

In his Preface the author tells us that, having had excellent opportunities of studying this complex subject both in this country and abroad, he is desirous of bringing into line and of comparing some of the best practical teaching of the English and the foreign schools.

The book is divided into three parts:—1. Squint; 2. Ocular Paralysis; 3. Disturbance of Muscle Balance; and the text is illustrated by 61 diagrams by the author, some of which are not works of art.

The subject-matter is clearly and lucidly described, although here and there one-sided; but to the trained and experienced ophthalmologist who is familiar with the literature, not only in his own but in foreign languages, there is nothing new in the book. The best part of it, and apparently the one in which the author is most interested, is that dealing with the etiology and treatment of concomitant convergent strabismus. He leaves us in no doubt as to his beliefs, for he is an out-and-out believer in the fusion faculty theory. Although, no doubt, a very important factor, a *faulty fusion faculty* will not explain everything.

Digitized by Google

In the description of the operation of tenotomy it is recommended that the operator should stand behind his patient while operating on the right eye, and in front while operating on the left. Surely such a procedure is evidence of the decline of the "brilliancy" of the operator's technique, and compares very unfavourably with what prevailed in the days of the older Critchett at Moorfields. "Brilliancy" in operating is as much needed to-day as thirty years ago, and we are old fashioned enough to think that an operator who has to adopt the procedure here recommended cannot be a brilliant operator. We are told that an advancement operation case should be dressed daily. In all transplantation operations, if proper aseptic precautions be taken throughout, this is not only superfluous but injurious. The method recommended for preparing silk sutures is, to say the least, amusing from an aseptician's point of view; the suture is first sterilised, *then dried before the fire*. In dealing with the operative treatment by advancement, one would expect in a monograph such as this that a selection of the best known operations would be taken and described, but the author pins his faith to one. We may remind him that there are several other operations equally good, as we can testify from experience. What objection can the author have to English-made needles? We know of none. In dealing with nystagmus there is no reference to the latest theories, although they are of great interest and importance.

On the whole, the book is a good one, and so far as it goes, we can confidently recommend it to students of ophthalmology.

Anæsthetics and their Administration. By FREDERICK W. HEWITT, M.V.O., M.D.(Cantab). Third Edition. London: Macmillan & Co. 1907. Price 15s.

THE third edition of this well-known work has been so enlarged, and contains so much new material, that it may almost be regarded as a new book.

With few exceptions the scope of the work is most comprehensive, and the arrangement of the various departments of the subject is particularly good. There is little in the domain of general anæsthesia which is not included. Spinal and local anæsthesia, doubtless for reasons of space, are omitted. The section on the physiology of anæsthesia is admirable and up to date, the latest reports of The Special Chloroform Committee of the British Medical Association being included.

The author rightly holds that the "simple" anæsthesia of the laboratory, carried out by means of a tracheal tube, is a very different matter from the "complex" anæsthesia of the human subject, where

Digitized by Google

various respiratory factors come into force. Every anæsthetist is familiar with the ease with which anæsthesia is induced and maintained in man in cases where a tracheotomy tube is available.

The views expressed on the subject of shock are interesting and wider than those usually held. Two varieties of shock are described —"respiratory shock," which occurs early in anæsthesia, and the generally recognised "circulatory shock," which occurs during lengthy operations. The former type apparently is simply the result of asphyxia from laryngeal and respiratory spasm produced by surgical stimulus under insufficient anæsthesia.

This type of shock—if shock it can be termed—can only be seen when the anæsthetist has not got, or does not keep, his patient properly under the anæsthetic.

In discussing circulatory shock, the familiar views of Crile are fully recognised, and it is satisfactory to find the author against the generally accepted view that a profound anæsthesia will prevent shock.

Dr. Hewitt is evidently not a warm admirer of ethyl chloride as an anæsthetic, except for short anæsthesia in alcoholic subjects, and in the case of unmanageable children.

He very clearly points out the danger of this anæsthetic from the rapidity with which full anæsthesia may ensue and be overlooked.

He strongly upholds the CE mixture as a routine anæsthetic, and describes a special apparatus for administration which has proved satisfactory in his hands.

In the section on ether no mention is made of the open or American method of administration which is steadily gaining favour in this country. The original observation is made that when shock supervenes during ether anæsthesia the mucous secretion is arrested, reappearing as the shock passes off.

Chloroform anæsthesia is fully dealt with, though possibly some of the views expressed may not be generally accepted. On the whole, the author is not in favour of the various mechanical chloroform inhalers introduced of late years. He is evidently a believer in the use of anæsthetic "sequences." With all deference to a distinguished anæsthetist, it may be questioned whether such practice is not an unnecessary elaboration of an already difficult subject. It can be argued that the administration of two and three anæsthetics in sequence to a patient is not a desirable method, and can only be necessary in very rare instances. The numerous illustrative cases distributed through the book form an excellent feature, and are of the utmost value as a practical demonstration of the difficulties and risks of anæsthesia.

Digitized by Google

Guide to the Administration of Ethyl-Chloride. By G. A. H. BARTON, M.D., Anæsthetist to the North-west London Hospital, Throat Hospital (Golden Square), Female Lock Hospital and Royal National Orthopædic Hospital. Second Edition. Pp. 54. Demy 8vo. London: H. K. Lewis, 136 Gower Street. Price 2s.

IN this little book the author describes the present-day position of ethyl-choride as an anæsthetic, and we can confidently recommend it to those seeking a readable and efficient guide to its administration. There are, as might be expected, points on which we do not see quite eye to eye with Dr. Barton, but these are on matters of opinion and are of trifling importance. The author gives a full and interesting account of his method of maintaining ethyl-chloride anæsthesia during the performance of operations upon the upper air-passages. The other subject specially dealt with, and one of great interest to the general practitioner, is the use of this drug in the induction of chloroform narcosis, and details are given of a method that has been very successful in the hands of the author.

The Wife: Her Book. By HAYDN BROWN, L.R.C.P., &c., Edin., Fellow of the Royal Institute of Public Health and of the Obstetrical Society, London. Pp. 308. London: Sisley's Ltd. Price 2s. nett.

THE author of this work on childbirth is hopeful that the book "will offer some suggestions as to how humanity may improve itself. It will indicate," it is said, "that a more perfect parentage shall be sought to produce a more creditable offspring, always bearing in mind that posterity will be almost as it is in our power to make it—as we choose." It is a high aim, and the author deserves encouragement in so far as he has been able to fulfil his plan. To a certain extent he succeeds: he writes so that a woman may know how to preserve her health during pregnancy, labour and the nursing period he gives her good advice about jealousy in married life, about unfaithfulness, and about her personal appearance; and he has something to say about the treatment of infants. Of course there are other works of the kind covering much the same ground, and if read by sensible women neither they nor the present book will do any harm, while they may do some good. In his effort to be popular and easily understood by any woman the author sometimes writes very familiarly, and his comparisons are somewhat grotesque. This criticism applies specially to his paragraph headings and to the lines of poetry placed with great regularity at the ends of chapters. Here are some instances:—"Small

Digitized by Google

but Energetic" is the heading of a paragraph describing the sperma tozoa; "The Innocent Mistress" is the summary of an anecdote about a servant girl who persuaded her mistress that she was pregnant through the visitation of some Holy Spirit; and "Kumfy Bed-Rest" lets us know that there are some sentences describing how a mother can be made comfortable in bed during the puerperium. Here is the conclusion of Chapter XVI.:—"She (the patient) should also frequently pass water during the first stage. She will very possibly shiver a good deal; this is very common and should not create any alarm.

> "The first in loftiness of thought surpass'd,
> The next in majesty, in both the last,
> The force of Nature could no further go;
> To make a third, she join'd the former two.
>
> —DRYDEN."

The reviewer, after a great effort, is still unable to see any clear connection between the stages of labour and Dryden's lines on the three great poets of history; is it, perchance, that there are three of both?

Pelvic Inflammations in the Female. By THOMAS WILSON, M.D.(Lond.), F.R.C.S.(Eng.). Pp. 63. Bristol: John Wright & Co. 1907.

THIS little book comprises the Ingleby Lectures delivered by the author. It is of value in that it reflects the experience of one who has seen a large number of cases, the study of which has received much attention. There is much that is of practical value, although many conditions are referred to superficially, as, for instance, in pelvic cellulitis no reference is made to the general course of the disease or the anatomical position of abscess formation.

The author does not recommend extirpation of the uterus for acute puerperal septicæmia.

The context is good, and the information is imparted in a readable form, and, coming as it does from an obstetrician of much experience, it forms a useful addition to the literature of the subject.

Practical Fever Nursing. By EDWARD C. REGISTER, M.D. Pp. 352. Philadelphia and London: W. B. Saunders Co. 1907.

A GOOD fever nurse is usually competent to look after any acute disease satisfactorily, and all nurses will find much that is instructive and interesting in Dr. Register's book. The subject is divided into

Digitized by Google

two main sections. In the first the author discusses general nursing principles, and the practice of nursing as applied to febrile conditions. He gives much good advice about the pulse, the temperature, antipyretic measures, and the general symptoms of fever. His remarks about diet, particularly about the serving of food, might be read with advantage by every nurse. The chapter on the prevention of fevers and disinfection is exceedingly thorough and complete, and is profusely illustrated with figures of disinfecting apparatus. The second part of the volume is devoted to the detailed study of each disease in turn. The list of fevers considered is a long one, and includes rheumatism, tuberculosis, and various tropical diseases such as plague and yellow fever. The chapter on tuberculosis is very good, and in it, as in the rest of the book, enough scientific information is given to keep the nurse thoroughly interested, and at the same time to enable her to understand the reasons for various methods of treatment. The typhoid chapter is also very thorough, and the advice given seems eminently practical and sound. Throughout his whole work Dr. Register has been very successful in avoiding technical terms, which might puzzle those for whom he writes, and nurses will find the book most readable and comprehensible. There are many illustrations. The charts showing the temperatures of the different fevers are all good, and the series of photographs illustrating the cold bath treatment are clear and useful. On the other hand, it is hard to see the value of the photograph of a physician taking the pulse of a patient. Some of the pictures of rashes, again, are not very convincing, though those illustrating small-pox are good enough to be instructive. The bacteriological illustrations are also only fair, and it is doubtful whether there is any advantage in a nurse studying them. But the "graduates" of modern nursing schools, especially in America, would no doubt think little of a book which omitted bacteriology altogether. In any case, we cannot accuse Dr. Register of giving them more details in the letterpress than it is advisable they should know. His book, besides being invaluable for nurses, contains much which will interest medical men.

A Manual for Hospital Nurses. By EDWARD J. DOMVILLE, L.R.C.P., M.R.C.S. Pp. 152. London: J. & A. Churchill. 1907. Price 1s. 6d.

THIS book contains a short account of a nurse's duties towards her superiors, fellow-nurses and patients, and opens with a few pages about herself. The author is evidently well versed in the subject-matter of which he writes, although there is a tendency to use terms

Digitized by Google

which assume more knowledge then a probationer commencing her duties will probably possess. Much importance is rightly given to the necessity for cultivating the faculty of observation, and the nurse is urged to be methodical and exact in noting the details of food given, medicine administered, as well as the condition of urine, stools, &c. There is a useful and detailed account of the mode of preparing lotions, poultices, beef-tea, and so forth.

Perhaps the weakest part of the book is the Glossary, and certainly it must have been the most difficult part to write. Some of the definitions are inadequate, as, for example, "Humerus—the bone of the arm."

Notwithstanding these criticisms we can cordially recommend the book to those who are commencing their training as nurses.

A Text-Book of Mental and Sick Nursing. By ROBERT JONES, M.D., B.S., F.R.C.S., F.R.C.P. Pp. 222. London: The Scientific Press, Ltd. 1907. Price 3s. 6d. net.

THIS manual, which is dedicated to H.R.H. The Princess Christian, and has an introduction by Sir William Job Collins, is from the gifted pen of the physician-superintendent of the well-known London County Council Asylum at Claybury. It is intended not to supplant but to supplement the official Handbook on Mental Nursing of the Medico-Psychological Association, and consequently does not treat in detail certain of the more elementary subjects, *e.g.* anatomy and physiology, of the nurses' training, but is devoted mainly to the practical work of the mental nurse in institutions, hospitals and private homes. It is brightly and pleasantly written, and should prove useful to all nurses, male and female, engaged among the neurasthenic and insane, and will be found specially useful to the increasing number of nurses who have had regular medical and surgical training in a general hospital, and wish to equip themselves for the nursing of nervous and mental cases.

A Short Manual for Monthly Nurses. By CHARLES J. CULLINGWORTH, M.D., F.R.C.P., Consulting Physician to St. Thomas's Hospital. Sixth Edition. Revised and Enlarged. London: J. & A. Churchill, 7 Great Marlborough Street. 1907.

THIS little book was originally written by way of supplement to a book on general nursing. The general nursing part of the book has long

Digitized by Google

been out of print, so some of the details which were originally given in it have been included in this edition. The book is intended to serve as a practical guide to a monthly nurse, and is not intended for a midwife. It is very simply written, and contains a great deal of useful information in a small compass. The fact that it has reached a sixth edition amply proves that it has met a felt want among nurses. Monthly nurses will find it a most useful guide, but midwives require to know much more about midwifery than it contains. It is not illustrated.

Better Hygiene for the Children of the Poor. By J. DUNBAR-BRUNTON. Pp. 11. London: The Scientific Press, Ltd. 1907. Price 6d.

THIS little pamphlet is a plea for the provision in all crowded districts of roof-gardens and roof hospitals for delicate and tubercular children. It is suggested that all undetached houses in poor districts should have flat roofs, protected by parapets behind which the children could play in safety. The "hospitals" could be simple shelters, each under the charge of a trained nurse. They might be visited by a medical officer. The idea is evidently practicable enough. Indeed, roof play-grounds have been erected in America by many private citizens for their own children, and children's hospitals are also beginning to utilise their roof for the open-air treatment of their patients. This little pamphlet may assist in spreading interest in preventive methods.

LIST OF BOOKS RECEIVED.

1. Arterial Hypertonus, Sclerosis and Blood Pressure. By W. Russell. W. Green & Sons. Price 7s. 6d. 2. Diseases of the Genito-Urinary Organs and the Kidneys. By R. H. Green and Harlow Brooks. Saunders & Co. Price 21s. 3. The Pancreas: Its Surgery and Pathology. By A. W. Mayo Robson and P. J. Cammidge. Saunders & Co. Price 21s. 4. Medical Laboratory Methods and Tests. By Herbert French. Baillière, Tindall & Cox. Price 5s. 5. Manual of Prescribing. By C. R. Marshall. J. & A. Churchill. Price 5s. 6. Diseases of the Throat, Nose and Ear. By D. M'Kenzie. Rebman, Limited. Price 5s. 7. Alimentation et Hygiene des Enfants. By J. Comby. J. Rueff. 8. Disease: Its Cause and Prevention. By G. E. Richmond. H. K. Lewis. Price 2s. 9. Studies in Blood Pressure. By G. Oliver. H. K. Lewis. Price 4s. 10. Atlas of Illustrations of Clinical Medicine, Surgery and Pathology. Compiled for the new Sydenham Society. H. K. Lewis. 11. The Pyonex. By W. B. Rule. J. Bale Sons & Danielsson. Price 12s. 6d. 12. Life Insurance and General Practice. By E. M. Brockbank. Henry Frowde and Hodder & Stoughton. Price 7s. 6d. 13. Essentials of Physiology for Veterinary Students. By D. Noel Paton. Wm. Green & Sons. Price 12s. 6d. 14. The Chemical Basis of Pharmacology. By F. Francis and Fortescue Brickdale. Edward Arnold. Price 14s. 6d. 15. The Functional

Digitized by Google

Inertia of Living Matter. By D. Fraser Harris. J. & A. Churchill. Price 5s. 16. The Journal of Hygiene. By G. H. F. Nuttall. H. K. Lewis. Price 6s. 17. First Aid to the Injured and Sick. By F. J. Warwick and A. C. Tunstall. J. Wright & Co. Price 1s. and 2s. 6d. 18. Diseases of the Nose and Throat. By H. Tilley. H. K. Lewis. Price 14s. 19. A Text-Book of Treatment. By W. Calwell, J. Campbell and R. Campbell. Sidney Appleton. 20. Reference Handbook of Obstetric Nursing. By W. Reynolds Wilson. Saunders & Co. Price 6s. 21. Diseases of Children. By R. S. M'Combs. Saunders & Co. Price 10s. 22. Practice of Medicine. By J. M. Anders. Saunders & Co. Price 24s. 23. Diseases of the Nose and Throat. By D. B. Kyle. Saunders & Co. Price 18s. 24. Modern Otology. By Barnhill Wales. Saunders & Co. Price 24s. 25. Hospital Training School Methods and the Head Nurse. By Charlotte A. Aikens. Saunders & Co. Price 6s. 6d. 26. A Treatise on Diseases of the Skin. 5th edition. By H. W. Stelwagon. Saunders & Co. Price 25s. 27. Experimental Prophylaxis of Syphilis. By P. Maisonneuve. J. Wright & Co. Price 4s. 28. Gonorrhœa: Its Diagnosis or Treatment. By F. Barmann. Sidney Appleton. Price 6s. 29. The Sexual Instinct. By J. F. Scott. Sidney Appleton. Price 7s. 6d. 30. Transactions of the Glasgow Obstetrical and Gynæcological Society. 31. Functional Nerve Diseases. By A. T. Schofield. Methuen. Price 7s. 6d. 32. Golitzyu Hospital in Moskau. By S. Deruguisky. S. P. Jakowlew. 33. A Chronology of Medical History. By J. Young. Edward Everard. Price 2s. 6d. 34. Diseases of Occupation. By T. Oliver. Methuen & Co. Price 10s. 6d. 35. Diets in Tuberculosis. By N. D. Bardswell and J. E. Chapman. Messrs. Frowde and Hodder & Stoughton. Price 6s. 36. Essentials of Surgery. By A. Compton. Henry Kimpton. Price 4s. 37. Diseases of the Nose, Ear and Throat. By J. Kyle. Appleton. Price 12s. 6d. 38. Anatomy of the Brain and Spinal Cord. By H. E. Santee. Appleton. Price 16s. 39. The Medical Annual. J. Wright & Co. and Simpkin, Marshall & Co. Price 8s. 6d. 40. The Wife: Her Book. By Dr. Haydn Brown. Sisley's Limited. Price 2s. 41. Insanity: Its Causes and Prevention. By C. Williams. Ambrose & Co. Price 2s. 6d. 42. First Aid to Miners. By W. B. Arthur. J. Wright & Co. Price 6d. 43. Le Cancer. By C. Sobre Casas. G. Steinheil. 44. Hernia. By R. W. Murray. J. & A. Churchill. Price 4s. 6d. 45. The Vermiform Appendix and its Diseases. By D. Macartney. J. Maclehose & Sons. Price 3s. 6d. 46. Medical Gynæcology. By H. A. Kelly. Sidney Appleton. 47. The Treatment of Fractures. By C. L. Scudder. Saunders & Co. Price 24s. 48. Diseases of the Heart. By G. Dock. Saunders & Co. Price 21s. 49. Surgery: Its Principles and Practice. By W. Keen. Saunders & Co. Price 30s. 50. A Text-Book of Surgical Anatomy. By W. F. Campbell. Saunders & Co. Price 21s. 51. Atlas and Text-Book of Human Anatomy. By H. Sobotta. Saunders & Co. Price 25s. 52. Cancer. By Skene Keith and G. E. Keith. A. & C. Black. 53. Quain's Elements of Anatomy. By E. A. Schäfer, J. Symington and T. H. Bryce. Longmans, Green & Co. Price 10s. 6d. 54. Glandular Enlargement and Other Diseases of the Lymphatic System. By A. Edmunds. H. Frowde and Hodder & Stoughton. 55. Golden Rules of Venereal Disease. By C. F. Marshall. J. Wright & Co. Price 1s. 56. Public Health Laboratory Work. By H. R. Kenwood. H. K. Lewis. Price 10s. 57. A Short Practice of Midwifery. 5th edition. By H. Jellett. J. & A. Churchill. Price 10s. 6d. 58. A Manual of the Practice of Medicine. 8th edition. By Frederick Taylor. J. & A. Churchill. Price 16s. 59. A Manual for Midwives. By C. J. N. Longridge. J. & A. Churchill. Price 3s. 6d. 60. Rough Notes on Remedies. By W. Murray. H. K. Lewis. Price 4s. 61. Hay Fever, Hay Asthma. By W. Lloyd. H. J. Glaisher. Price 4s. 6d. 62. Diseases of the Breast. By W. L. Rodman. Sidney Appleton. Price 16s.

Digitized by Google

GENERAL INDEX.

A

PAGE

Appendicitis, A hundred consecutive operations for; some deductions therefrom. By J. W. Dowden 103
Appendicitis, perforative, in an inguinal hernia, Notes on a case of. By G. F. Whyte . . 245
Appendix, Perforation of the, in the right inguinal canal of a patient aged 75, Notes on a case of. By G. L. Chiene . . 321

B

Barbour, A. H. F., On the frozen sections by Bumm and Blumreich, and by Zangemeister. Is there a lower uterine segment? 294, 395
Beatson, Sir G. T., Traumatic asphyxia 485
Births and deaths in eight of the principal towns of Scotland . 64, 137, 247, 322, 432, 530
Bramwell, Byrom, Analysis of seventy-six cases of Poliomyelitis anterior acuta 501
Brown, R. Dods, The Psychoses of influenza 509

C

Calmette's ophthalmo-tuberculin reaction, On the reliability of. By G. Lovell Gulland and D. J. Williamson 316
Carmichael, E. Scott, The surgical department and teaching of surgery in the Johns Hopkins Hospital 513
Chiene, G. L., Notes on a case of perforation of the appendix in the right inguinal canal of a patient aged 75. 321
Chronic intussusception, A case of. By J. Wallace Milne . . . 306

PAGE

Chrysarobin in psoriasis, The use of. By Norman Walker . . 312
Clark, K. S., Rheumatoid arthritis, its etiology, clinical symptoms and pathology 121
Clinical lecture on various subjects, A. By Jonathan Hutchinson . 489
Clinical notes, Some. By John Gordon 425

D

Digestion and feeding in infants. By A. Dingwall Fordyce . . 47
Direct laryngoscopy, tracheoscopy, bronchoscopy, and œsophagoscopy. By J. S. Fraser . . 308
Dowden, J. W., A hundred consecutive operations for appendicitis; some deductions therefrom 103

E

Eason, J., The treatment of eczema of infants and young children by thyroid 428
Eczema of infants and young children, The treatment of, by thyroid. By J. Eason . . 428
Editorial Notes and News . . 1, 97, 193, 289, 385, 481

F

Fordyce, A. Dingwall, Digestion and feeding in infants . . 47
Formic acid, Action of certain salts of, on the circulatory and muscular systems. By Alexander Goodall and Isabel Mitchell . 30
Fraser, J. S., Direct laryngoscopy, tracheoscopy, bronchoscopy, and œsophagoscopy 308
Frozen sections by Bumm and Blumreich, and by Zangemeister. Is there a lower uterine segment? By A. H. F. Barbour . . 294, 395

Digitized by Google

G

PAGE

Galloway, A. Rudolf, Certain aspects of "sight-testing," "spectacle prescribing," and other allied subjects 11
Gardiner, F., Some experiences with X-ray and high frequency treatment 110, 212
Goodall, Alexander, The action of certain salts of formic acid on the circulatory and muscular systems 30
Gordon, John, Some clinical notes 425
Greig, D. M., A case of Henoch's purpura simulating intussusception 302
Gulland, G. Lovell, On the reliability of Calmette's ophthalmo-tuberculin reaction . . . 316

H

Halley, George, Two cases of inguinal hernia 241
Harvey, W. F., Notes on immunity to disease 197
Henoch's purpura simulating intussusception, A case of. By D. M. Greig 302
Hernia, inguinal, Two cases of. By George Halley 241
Hutchinson, Jonathan, A clinical lecture on various subjects . 489

I

Immunity to disease, Notes on. By W. F. Harvey and A. M'Kendrick 197
Incipient mental disease, The recognition and treatment of. By T. C. Mackenzie 230
Influenza, The Psychoses of. By R. Dods Brown 509

L

Lawson, David, Survey of journal literature of 1906-7, dealing with some aspects of tuberculous disease and the tuberculous problem 147
Letter to the Editors . . . 526
List of books received . . 95, 575

M

PAGE

Mackenzie, T. C., The recognition and treatment of incipient mental disease 230
Medical inspection of schools. By A. Mercer Watson . . . 407
M'Donald, Stuart, Pathology in the new curriculum in the University of Edinburgh 416
Milne, J. Wallace, Case of chronic intussusception 306
Mitchell, Isabel, The action of certain salts of formic acid on the circulatory and muscular systems 30
M'Kendrick, Anderson, Notes on immunity to disease . . . 197

N

New books and new editions, 190, 278, 364, 471, 561

O

Obituary—
Sir Thomas M'Call Anderson . 250
Thomas Annandale . . . 68
A. Halliday Douglas . . . 324
Charles A. Underhill . . 433
Sir Patrick Heron Watson . . 66

P

Pathology in the new curriculum in the University of Edinburgh. By Stuart M'Donald . . . 416
Poliomyelitis anterior acuta, Analysis of seventy-six cases of. By Byrom Bramwell . . . 501

R

Rheumatoid arthritis; its etiology, clinical symptoms and pathology. By K. S. Clark 121
Review of sixteen months' work in the Skin Department of the Royal Infirmary, Edinburgh. By Norman Walker . . . 517

Digitized by Google

S

PAGE
"Sight testing," "spectacle prescribing," and other allied subjects, Certain aspects of. By A. Rudolf Galloway . . . 11
Societies, Meetings of—
Edinburgh Medico-Chirurgical Society . 71, 139, 252, 327, 532
Edinburgh Obstetrical Society 75, 142, 254, 331, 534
Glasgow Medico-Chirurgical Society . . 254, 334, 436, 535
Glasgow Northern Medical Society 77, 145, 336, 537
Aberdeen Medico-Chirurgical Society . 80, 146, 256, 338, 439
Forfarshire Medical Association 77, 257, 339, 440
Surgery, The teaching of, and the surgical department in the Johns Hopkins Hospital. By E. Scott Carmichael 513

T

Traumatic asphyxia. By Sir G. T. Beatson 485
PAGE
Tuberculous disease and the tuberculous problem, A survey of journal literature of 1906-7, dealing with some aspects of. By David Lawson 147

W

Walker, Norman. The use of chrysarobin in psoriasis, p. 312; and a Review of sixteen months' work in the Skin Department of the Royal Infirmary, Edinburgh 517
Watson, A. Mercer, Medical inspection of schools . . . 407
Whyte, G. F., Notes on a case of perforative appendicitis in an inguinal hernia 245
Williamson, D. J., On the reliability of Calmette's ophthalmo-tuberculin reaction . . . 316

X

X-ray and high frequency treatment, Some experiences with. By F. Gardiner . . . 110, 212

Digitized by Google

CRITICAL SUMMARIES AND ABSTRACTS OF RECENT LITERATURE.

Anæsthetics.

PAGE
D. C. A. M'Allum 182

Diseases of Children.

J. W. Simpson 552

Diseases of the Ear, Nose and Throat.

H. Peterkin 186, 547
R. M'Kenzie Johnston . . . 351
J. S. Fraser 351

Dermatology.

F. Gardiner 557

Medical Jurisprudence.

Carstairs Douglas 463

Medicine.

D. Fraser Harris 81
Edwin Bramwell 166
Edwin Matthew 261
W. T. Ritchie 341
J. Eason 442
J. D. Comrie 538

Obstetrics and Gynæcology.

PAGE
R. C. Buist 271
B. P. Watson 454
J. W. Ballantyne 544

Ophthalmology.

Angus M'Gillivray . . . 274
J. V. Paterson 467

Pathology.

Theodore Shennan . . . 355

Public Health.

W. Robertson . . . 90, 459

Surgery.

Henry Wade 172
Lewis Beesly . . . 266, 542
C. B. Paul 348
A. A. Scot Skirving . . . 448

Digitized by Google

REVIEWS OF BOOKS.

	PAGE
Administration of Ethyl-Chloride, Guide to the. By G. A. H. Barton	571
Alembic Club Reprints, No. 17. Medico-Physical Works. By John Mayow	561
Anæsthetics and their Administration. By Frederick W. Hewitt	569
Arterial Hypertonus, Sclerosis and Blood Pressure. By W. Russell	190
Atlas of Illustrations of Clinical Medicine, Surgery and Pathology	376
Brain and Spinal Cord, Anatomy of the, with Special Reference to Mechamism and Function. By Harris E. Santee	567
Cancer: Relief of Pain and Possible Cure. By Skene Keith and George E. Keith	565
Child Study, An Introduction to. By W. B. Drummond	365
Children of the Poor, Better Hygiene for the. By J. Dunbar-Brunton	575
Chirurgie Oto-Rhino-Laryngologique (Oreille, Nez, Sinus de la face, Pharynx, et Trachee). By G. Laurens	381
Cytology, The Essentials of. By C. E. Walker	372
De L'Apepsie. By Dr. H. Francais	281
Diseases of Children, The Treatment of. By C. G. Kerley	370
Diseases of the Genito-Urinary Organs and the Kidney. By R. H. Greene and Harlow Brooks	379
Diseases of Infancy and Childhood. By L. Emmett Holt	371
Diseases of the Lungs. By Robert H. Babcock	476
Diseases of the Nose, Throat and Ear, A Manual of. By E. B. Gleason	383
Diseases of Occupation from the Legislative, Social and Medical Points of View. By T. Oliver	474
Epilepsy, The Borderland of. Faints, Vagal Attacks, Vertigo, Migraine, Sleep Symptoms, and their Treatment. By Sir W. R. Gowers	369
Etude Histo-Chimique et Cytologique des Crachets. By S. Israels de Jong	285
First Aid to the Injured and Sick. By Warwick and Tunstall	566
Gynæcology and Abdominal Surgery. Edited by H. A. Kelly and C. P. Noble	378
Hospital Nurses, A Manual for. By Edward J. Domville	573
Human Anatomy, Atlas and Text-Book of. By J. Sobotta. Edited with Additions by J. P. M'Murrich	567
Index of Treatment by Various Writers, An. Edited by R. Hutchinson and H. Stanfield Collier	366
Insanity and Allied Neurosis. By G. H. Savage	368
Intestines and Peritoneum, Diseases of the. By Prof. S. H. Nothnagel	279
Le Malade et la Medicin. By Dr. Doyen	369
Le Ventre. By Dr. F. Cautru and Dr. M. Bourcart	377
Life Insurance and General Practice. By E. M. Brockbank	374
Light and X-ray Treatment of Skin Diseases. By Malcolm Morris and Ernest Dore	478
Marriage and Disease. By J. Dulberg	287
Medical Diagnosis. By C. L. Green	364
Medical Examination Questions	374
Medical History, A Chronology of. By James Young	563
Medicine, A System of, by Many Writers. Edited by T. C. Allbutt and H. D. Rolleston	278
Medicine, Minor. By W. E. Winter	192
Mental and Sick Nursing, A Text-Book of. By Robert Jones	574
Monthly Nurses, A Short Manual for. By Charles J. Cullingworth	574
Movable Kidney and Other Displacements and Malformations. By David Newman	282
New Sydenham Society's Atlas	285
Opsonic Method of Treatment, The. By R. W. Allen	477
Pathology, General and Special, for Students of Medicine. By R. Tanner Hewlett	373
Pelvic Inflammations in the Female. By Thomas Wilson	572

Digitized by Google

	PAGE
Physical Diagnosis, with Case Examples of the Inductive Method. By H. S. Anders	284
Physical Methods in the Treatment of Heart Disease. By A. G. Dempster Bennett	284
Physics, Elements of, for Medical Students. By F. J. M. Page	372
Physiology for Veterinary Students, Essentials of. By D. Noel Paton	286
Post-Graduate Clinical Studies for the General Practitioner. By H. Scott	285
Practical Diagnosis. By H. Amory Hare	283
Practcal Fever Nursing. By Edward C. Register	572
Precious Stones for Curative Wear, and other Remedial Uses, likewise the Nobler Metals. By W. T. Fernie	564
Preventable Blindness. By N. Bishop Harman	384
Proceedings of the Royal Society of Medicine	373
Squint and Ocular Paralysis. By E. Lucas Hughes	568
Text-Book of Treatment, A. Edited by R. J. Ferguson. Part I., Obstetrics and Gynæcology. By John Campbell	563
The Chemical Basis of Pharmacology. An Introduction to Pharmacodynamics based on the Study of the Carbon Compounds. By F. Francis and J. M. Fortescue Brickdale	375
The Edinburgh Stereoscopic Atlas of Obstetrics. Edited by G. F. Barbour Simpson and Edward Burnet	379
The Functional Inertia of Living Matter. By D. Fraser Harris	471
The Ophthalmoscope, A Manual for Students. By G. Hartridge	480
The Tragedy of the Highland Doctor. By Riccardo Stephens	288
The Wife: Her Book. By Haydn Brown	571
Transactions of the College of Physicians of Philadelphia	282
Transactions of the Glasgow Obstetrical and Gynæcological Society	380
Tropical Diseases. A Manual of the Diseases of Warm Climates. By Sir Patrick Manson	367
Tuberculosis, Diets in, Principles and Economics. By Noel D. Bardswell and J. Ellis Chapman	474
Tuberculosis, Third Annual Report of the Henry Phipps Institute for the Study, Prevention and Cure of	476

Digitized by Google

LIST OF ILLUSTRATIONS.

	PAGE
Action of Certain Salts of Formic Acid—	
4 *Figures*	34
On the Frozen Sections—	
2 *Plates*	300
4 *Figures*	396
The Use of Chrysarobin in Psoriasis—	
4 *Plates* (*coloured*)	312, 314
Case of Traumatic Asphyxia—	
3 *Plates* (1 *coloured*)	486

Portrait of Sir Patrick Heron Watson	*facing*	66
Portrait of Professor Annandale	„	68
Portrait of Sir Thomas M'Call Anderson . . .	„	250
Portraits of Dr. Halliday Douglas	„	324
Portrait of Dr. Charles E. Underhill	„	433

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google